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Pulp and Paper Men Organize on Pacific Coast

George W. Houk of the Hawley Pulp and Paper Co., Oregon City, Ore., Is Elected President of the Recently Organized Pacific Coast Association of Pulp and Paper Manufacturers—Program To Be Elastic But Taxation and Problem of Foreign Pulp Dumping To Be Considered This Year

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 6, 1930.—The Pacific Coast Association of Pulp & Paper Manufacturers is the latest organization in the west to undertake a wide scope of service for the industry. A distinguished group of pulp and paper officials had felt for some time that there were many problems confronting western pulp and paper manufacturers which could be successfully and profitably considered around a common council table, and last spring at the paper trades convention at Del Monte a tentative organization was formed.

Officers Elected

At that time it was decided to hold a meeting in Portland late in the fall when permanent organization would be achieved and officers elected. An association committee was appointed at that time to report later, and during the succeeding months this committee has worked overtime stirring up interest and getting prospective members lined up. When they met in Portland recently George W. Houk of the Hawley Pulp and Paper company, Oregon City, Ore., was elected president of the Pacific Coast Association of Pulp and Paper Manufacturers; Ossian Anderson of the Puget Sound Pulp and Paper company, Everett, was elected vice-president, and Elmer Herb of the Pacific Coast Paper Mills, Bellingham, was elected secretary-treasurer.

The Executive Committee

In addition to the officers named the executive committee includes Max Oberdorfer of the St. Helens Pulp and Paper company; J. L. Murray, Everett Pulp and Paper company, F. W. Leadbetter, Columbia River Paper Company and R. A. McDonald, Crown-Zellerbach corporation.

Program of Activities

The program of activities on which the new organization will engage will be rather elastic at first, according to officials, but it is understood that legislative matters and taxation will be salient subjects to be considered during this year, as will also the problem of foreign pulp dumping.

To Cooperate With National Groups

Although local problems will be of chief concern to the west coast group it is the intention of the association to co-operate in every way with the national groups when necessary. This section has ever been alert to the problem of safety and this will retain its importance in the work of the association.

To Make More Detailed Plans Later

Another meeting of the Pacific Coast Association of Pulp and Paper Manufacturers will be held in the near future when the details of plans will receive more pronounced attention.

To Prohibit Imports From Soviet Union

WASHINGTON, D. C., December, 1930.—Senator Oddie of Nevada has introduced a bill "to prohibit the importation of any article or merchandise from the Union of Soviet Socialist Republics" while Senator Reed of Pennsylvania has introduced a bill "to suspend for a period of two years general immigration into the United States."

Senator Oddie's bill provides "that the transportation into the United States (or any territory subject to the jurisdiction thereof, of any article or merchandise (1) from any territory subject to the jurisdiction or control of the Government of the Union of Soviet Socialist Republics, (2) mined, produced, or manufactured wholly or in part in any such territory, or (3) produced or manufactured from materials, any of which have been mined, produced or manufactured in any such territory, is prohibited. The Secretary of the Treasury is authorized and directed to prescribe such regulations as may be necessary for the enforcement of this Act." The bill has been referred to the Senate Committee on Finance.

The Reed bill, which has been referred to the Senate Committee on Immigration provides that "no immigration visa shall be issued to any alien" until July 1, 1933. Certain exceptions are made in connection with families of those who are already in this country.

Maine Seaboard Paper Co. Makes First Run

F. C. Bagley, vice president and general manager of the Maine Seaboard Paper Company, Augusta, Me., advises that the first paper was made at this mill November 28, which is one day less than a year from the time that ground was first broken. This is an unusual record of which the company may well be proud.

As probably the first news print mill built in New England and one of only four or five built in the whole country since 1911, when due largely to the influence of the daily newspapers throughout the country news print was placed on the free list, the PAPER TRADE JOURNAL welcomes this new mill to the industry and hopes that it will have a long and prosperous career.

Canadian Pulp and Paper Convention Cancelled

Mainly Owing to Disturbed News Print Conditions, Annual General Meeting Has Been Abandoned For First Time Since Association Was Formed, Seventeen Years Ago—Executive Council and Technical and Woodlands Sections Will Meet

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 8, 1930.—Three most interesting developments in the news print situation have taken place during the past week. They are:

1.—The announcement that the usual annual general meeting of the Canadian Pulp and Paper Association has been cancelled.

2.—The announcement that E. W. Beatty, K.C., president of the Canadian Pacific Railway, has been named arbitrator to decide on plant valuation in connection with the proposed big news print merger.

3.—The announcement that the International Paper Company is willing to dispose of its news print business in Canada to a Canadian consolidation, retaining, however, the hydro-electric business it has built up in that connection.

The first of these announcements is officially confirmed. The two others are lacking authority, and at the moment of writing are ranked merely as interesting gossip, or in other words as straws indicating the direction in which some interests would like to see the wind blow.

The cancellation of the annual general meeting of the Canadian Pulp and Paper Association has been decided upon owing to the disturbed conditions in the news print industry. Possibly the discussions which have taken place between the executives of news print organizations regarding the proposed merger of leading companies have something to do with the decision, and possibly also recent developments in connection with the Newsprint Institute of Canada, revealing a wide division within the industry on certain matters of policy have made it desirable not to stage general discussions. At any rate, the feeling in the trade is that under all the circumstances the executive of the association has been wise to forego the annual get-together. This is the first time since the Association was formed seventeen years ago that the annual general meeting has been abandoned.

However, the annual general executive council meeting will be held as usual, as will also the annual meetings of the Technical and Woodland Sections. These meetings will be private.

One of the matters to be decided at the executive meeting will be the appointment of a secretary and manager to succeed the late Edward Beck. Meanwhile A. E. Cadman, who for some years has been the statistician of the association, is carrying on as acting secretary.

Rumors Regarding Dr. Beatty

The guarded statements made here that an arbitrator has been appointed to adjudge values of the companies entering the proposed consolidation of leading news print companies, and that E. W. Beatty is believed to be that man, are regarded as indicative that the most serious problem in connection with the proposed merger is at last receiving serious attention, namely, that of valuation. There are two versions of the rumor—one that Mr. Beatty has been proposed by banking interests who have taken a hand in the situation; the other that he has been proposed by two of the leading companies in the proposed amalgamation. The general view is that the proposal, or it may be suggestion, has come from outside the industry, and that in any case it is doubtful whether Mr. Beatty, who is an extremely busy man, would undertake such an onerous task. That something is doing, however, of which Mr. Beatty is well informed, is inferred from the announcement that he prefers not to make any comment at present.

That the banks are keenly interested in the proposed merger goes without saying, seeing the serious effect which the situation has had on the value of news print securities. That they have been taking some action with a view to a wise solution of the problem is considered likely. Sir Charles Gordon made a reference to the situation in his speech during the week at the annual meeting of the Bank of Montreal, of which he is the president. He said:

"The news print industry has been adversely affected by failure of consumption to keep step with growing output. The wisest course to pursue in this circumstance would seem to be to distribute production to a point where each plant would be able to run some of its machines on full time and reduce manufacturing expenses to the lowest possible point. Consumption of news print will probably increase gradually, but it would appear that meanwhile construction of new mills should cease."

There is some speculation as to the underlying meaning of the statement, and some see in it a plain intimation to the news print interests the full significance of which can only be gained by reading through the lines.

As matters stand now most of the companies have long since passed their dividends on common stock, Price Bros. and Co. being an outstanding exception. At present prices various companies operating at far below capacity are on an unremunerative basis, and there are grave doubts whether some of them will even earn their prior charges. It is believed that the closing of some of the higher cost mills after Christmas is inevitable, and that if a merger on the scale proposed is entered into there will have to be drastic writing down of capitalization.

Whatever happens in connection with the proposed general merger, it is now regarded as fairly certain that the Abitibi Power and Paper Company and the Canada Power and Paper Company, the two largest Canadian organizations, will enter into a merger by the formation of a holding company. They are now said to be very close to this development.

Meanwhile the official statement of the International Paper Company that the 1930 prices for news print will be maintained for 1931 has caused some feeling of relief as possibly averting the open price war that was feared.

The companies whose names are mentioned in connection with the merger are:

Canada Power and Paper Corporation.
Canadian International Paper Company.
Price Bros. & Co., Ltd.
Abitibi Power and Paper Company.
St. Lawrence Corporation.
Fort Francis Pulp & Paper Company.
Kenora Paper Mills, Ltd.

In news print alone these companies have a productive capacity of 8,277 tons daily, made up as follows:

	Tons
Canada Power and Paper	2,464
Canadian International	1,637
Price Bros.	936
Abitibi	2,200
St. Lawrence	470
Fort Frances	320
Kenora	250
Total	8,277

It is calculated that the total assets represented by the companies named exceed $700,000,000.

The International's Canadian Plants

The rumor that the International Paper Company may be willing to dispose of its Canadian news print mills to a Canadian con-

solidation while retaining its hydro-electric plant has come as a surprise to many people, especially as the company has been in a position to run its plants here at around 100 per cent of capacity, and has enormous holdings of some of the choicest pulpwood areas in the country. If it did so dispose of this end of its business it would be a development of major importance. It is no secret that the company's hydro-electric developments in Canada are a most lucrative part of its business here, and that their promise has for some years been tending to overshadow the paper-making part of the company's activities. The company's subsidiary, the Canadian Hydro-Electric Corporation, Ltd., now has eighteen hydro-electric plants with a total designed capacity of 809,319 h.p. Of this total, 565,459 h.p. has been built during the past five years, being more than one-fourth of all the hydro-electric horsepower installed in the Dominion during that period. An additional 54,000 h.p. is now nearing completion. Every horsepower now developed under the company's construction program was sold before completion of the projects.

Naturally, future prospects for this end of the company's business are brighter than the news print prospects. All the same, it would be a surprise if the company sold out its news print interests here, unless there is some arrangement under way by which the company would have an assured position in the proposed news print merger.

Russian Pulpwood Freight Rate

The Canadian National Railways have filed with the Railway Commission notice that after December 15 the company will no longer grant preferential rates to Russian pulpwood shippers passing that commodity through Canada from eastern ports of entry to northern New York state. This action is taken following publicity given to the preferential tariff which permitted the Russian product to be handled cheaper than the Canadian product, and thus to undersell it in northern New York. The railway's action is regarded as an important victory for Canadian shippers.

When protest was first made the Canadian Pulpwood Association declared that granting a lower rate on Russian than on Canadian wood placed the latter at a disadvantage in reaching the American market. Furthermore G. C. Piche, chief of the Quebec Forestry Service, brought the matter to the attention of the Railway Commission. He said there was no consumption of Russian pulpwood in Canadian mills, but, enjoying the benefit of a ship-and-rail rate, and its original price being considerably under that of Canadian pulpwood, the Soviet commodity was underselling Canadian pulpwood in northern New York state. The Russian pulpwood was brought in ocean freighters from Archangel and Baltic Sea ports to Sorel and Three Rivers, and from there was transferred by rail to its destination.

Claim for Flooded Water Power

Freeman T. Cross, lumberman, of Farm Point, near Hull, Que., is claiming from the Gatineau Power Company $675,000, with interest and costs, on the ground that, when the Chelsea Falls development of the hydro company was completed, a water power he owned at a spot called Cascades was submerged. The Quebec Public Service Commission will hear the case.

Richard Buckley Given Farewell Party

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., November 17, 1930.—A farewell party was given this week by employees of the International Paper Company to Richard Buckley, who has been promoted to the position as general manager of the branch at Piercefield. The affair was held at the Fort Edward Fish and Game Club and was attended by a number of executives from the local plant. During the evening Mr. Buckley was presented with a purse of gold and other gifts in appreciation of his efforts while employed here. He will take up his new duties at Piercefield next week. During his stay here he had served as assistant manager and the new position is regarded as a promotion brought about through his zealous efforts.

Boston Paper Market Irregular

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 8, 1930.—A fair amount of business was transacted in the wholesale paper trade here last week, in the aggregate. Some feel that business could be called fair only by a stretch of the imagination, and some regard business as good in view of prevailing industrial and commercial conditions. Naturally much of the trade in the last few weeks has been seasonal. In some instances, a considerable quantity of paper has been sold for holiday purposes to regular customers, largely as an accommodation, without much profit realized in the transactions. The movement of paper for holiday purposes, however, is not estimated as a whole to be up to normal. Members of the industry, at the same time, are looking towards 1931 for an improvement. It is felt that stocks in hands of customers are low, and that with a gradual return of normal activity which is predicted for the coming year, orders for a larger volume of supplies will be placed. In the near future much paper will be needed by towns for the annual town reports, included by some dealers as a specialty. Then, too, as previously noted in these columns, extensive direct mail campaigns are being planned which will require considerable material. Values tend to be steady.

The box board industry remains quiet, but prices are firm. The trade, however, is hopeful for more interest in their commodity after the turn of the year. Many box board manufacturers are to close their plants Christmas week.

Paper stock has continued dull as a rule, although some orders have been placed to fill special requirements. Values remain down. It is expected, however, that after January 1 there will be a sizable amount of business, with rising prices. Stocks of all grades of old papers and rags in the hands of consumers are said to be low.

Chicago Paper Association's Activities

The next regular meeting of the Chicago Paper Association, scheduled for the Bismarck Hotel on Tuesday evening, December 9, should be an interesting one according to D. F. Peck, president. Old business of the past fiscal year will be wound up and plans made for 1931. Of chief concern to the association is the present condition of the paper bag market and of paper bag prices in particular. The association, according to Mr. Peck, led a hard fight to have the bag manufacturers issue a new price list which would be more in line with efforts to stabilize the market here and improve conditions. After some time and effort, it is reported, the manufacturers announced that they would concur to the association's wishes and issue such a new list. Now, according to Mr. Peck, the manufacturers report that they have canvassed the jobbing trade and come to the conclusion that there is not sufficient desire or need for a new list to cause one to be issued. This negative report came as somewhat of a surprise to the association inasmuch as, according to Mr. Peck, no one here seems to know of any such a canvass and no one can understand just why the manufacturers arrived at such a conclusion. The association will probably go to work immediately in an effort to cause the bag manufacturers to go with their original plans of issuing a new bag list.

Keith Paper Co. Makes Improvements

[FROM OUR REGULAR CORRESPONDENT]

TURNERS FALLS, Mass., December 2, 1930.—Extensive additions have been made to the paper machine auxiliary equipment of the Keith Paper Company and the water filter systems renovated. Five Tolhurst centrifugals made by the Tolhurst Machine Works Inc. of Troy, N. Y. have been installed, all four machines in the mill being equipped with these units. A contract has been let for the building of a large new sedimentation basin and the installation of modern chemical treatment. Changes are also under way in the filtration plant.

Demand For Paper Expanding In Philadelphia

Steadiness Prevails In Fine Paper Market, With Bonds, Ledgers and Writing Papers In Seasonal Request—Shipments of Practically All Grades of Wrapping Paper Are Moving In Good Volume—Manufacturers Generally Marking Time.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 8, 1930.—With volume of paper moving at this season growing daily in renewed activity incident to the holidays there is effort to clear up stocks on hand in order to make way for the new year's supplies before the month's end inventory is at hand. Dealers are more encouraged as the holiday markets quicken and shipments of paper extend to all lines of the wrapping paper division with a fair demand for many grades of fine papers. Manufacturers are prone to mark time pending the revelations of the year-end business accounting. There is little demand for paper of accountable size in any division of the industry with the exception of contract orders made for the last quarter of 1930 which must be met at present valuations. There is firm belief among dealers that in the coming year mill prices will be steadier, as present efforts indicate this trend. Prices for the past year have been at rock bottom and still continue to be so in many lines of wrapping paper and specialties as well as converted products linked with the coarse paper market. Both manufacturers and dealers are more inclined to get together to stabilize conditions and to promote a more profitable basis of business conduct in the coming year. It is quite evident that co-operation is being more generously extended by dealers and, with the mills already conservatively inclined to restriction in production, the coming year may right the present disturbances that have proved so harmful.

Twine Conditions Disturbed

Another branch of the trade, although not directly concerned with paper production, that has been in chaotic condition for many months of the late year and still is much upset, is the twine section. There have been many price reductions in the current season with values at the lowest levels of the year and record bottom for the past fifteen years. While there is no overproduction at present, as mills are restricting their output, there has been a large volume of twine carried over from last year and the early part of the current year which must be disposed of before the manufacturers are able to control the situation to any great advantage to dealers or makers of cords and twines generally. Despite curtailment of production, stocks on hand are large and dealers and distributors are endeavoring to clear out stale goods at almost any price obtainable. This applies to jute products as well as cotton twines and despite unfavorable conditions in India, which were predicted to have an effect on the hemp crop, with large shortage resulting, these twines have likewise suffered in the downward trend and still bear the marks of efforts to reduce manufactured lines now held and to be disposed of to make way for fresh products in the coming year.

Fine Papers More Active

Year end accounting and the prospects of demand for the inventory season keep an activity in special lines of fine papers for the recording of the current year's business and for the opening of new year accounts. Bonds, ledgers and writing papers are more active, as manufacturing stationers and the retail stationers who cater to this class of trade are in the market for more frequent orders, but still confine purchases to small lot sizes as their needs develop. Announcements and direct mail grades of papers are in seasonable activity as the year-end approaches and the holidays open up new avenues for merchandise. Printers who have built up a goodly amount of direct mail patronage state they are more active than they have been for many months and in a few cases are obliged to keep plants on overtime schedule to meet demands of the rush season.

Paper Merchants To Play Santa

A Christmas party will be held by the members of the Philadelphia Paper and Cordage Association when that organization holds its monthly session at the Adelphia Hotel on December 19, to which will be invited twelve boys and an equal number of girls to be sent by the Salvation Army. The children will be treated to a turkey dinner and toys and candy will be distributed by the members along with new clothing for the youngsters. There will be a large Christmas tree erected in the Gold Room from which the presents will be suspended and with one of the associates playing the part of Santa Claus, these will be given to the group of children present. The ordinary business session for the December month will be postponed and the occasion made one entirely for jollification and the dispensation of cheer to those less fortunate youngsters of the poor who will join in the noontime dinner. There will be a program of entertainment included. The members of the entertainment committee are President George K. Hooper, of the Hooper Paper and Twine Company; William Edkins, of the Keystone Cordage Company; and John G. Birle, Jr., chairman of the committee, and associated with the American Forest Products Company.

Thomas W. Price Co. to Hold Christmas Party

Another group of paper trade associates to join in the merry Christmas frolics is that of the staff of Thomas W. Price Company, 503 Ludlow street, which will hold its annual party at headquarters. There will be erected a large Christmas tree to be filled with presents for the members of the Vici Club, the social organization of the company. The party is scheduled for Christmas Eve and will include in addition to the traditional tree a luncheon and other entertainment. Following the service of luncheon by caterers the tree is to be lighted and the gifts dispensed among the staff. A musical program and other diversions will be included in the afternoon entertainments. President Thomas R. Fort, Jr., and his associate in the business, Norman W. Fort, will be present to extend the season's greetings to the workers, while Miss Mame Hogan, president of the Vici Club, will respond in behalf of the staff.

Waste Merchants to Celebrate Yuletide

Combined in the quarterly session of the Wholesale Waste Merchants Association of Philadelphia, to be held at the Lorraine Hotel December 10, will be the nomination of officers and the service of Christmas dinner. There will be a report on the routine business of the association given by Secretary William J. McGarity, head of the Penn Paper and Stock Company, while President Thomas A. Kenny will preside in the following Yuletide celebration.

Lindsay Paper Co. Expansion

With the current month, the Lindsay Paper Company, 804 Sansom street, provided for the expansion of its lines and a campaign on the latest of papers to be added to its fine grades. These are the Worthy Paper Company's new Hand and Arrow, deckle edge four side 100 per cent rag papers made in two finishes and shades of white and shaded plate and laid cold pressed finished. There are three sizes of envelopes to match. The firm is also conducting a campaign which started last week, on the Worthy Paper Company's Hand and Arrow, Aurelian, Signature,

and Worthy Manuscript cover papers and the Sterling Bond. This campaign will cover a two weeks drive on the Worthy papers as enumerated and for which the Lindsay Paper Company is sole distributor in the Philadelphia territory. In line with the aggressive campaign on various papers stocked by the company there will be a reorganized staff of workers and a newly appointed sales promotion manager assigned to conduct the sales drives. Carl E. Bellas, who is well known in direct mail advertising, and other advertising agencies of the city, and who formerly was connected with the Donovan Armstrong Advertising Agency as assistant Production Manager, has been appointed sales promotion manager for the Lindsay company and will contact various advertising agencies and sales promotion managers of industrial concerns. He has been given a new staff of three workers, R. C. Hazzen, J. J. Robison, and E. W. Lasker, who will give their time to sales representation of the various papers carried. J. J. Robison will also cover Trenton, N. J., and Wilmington, Del., while the other two will cover Philadelphia. The Lindsay Paper Company just completed a drive on the fine papers manufactured by the Reading Paper Mills, of Reading, Pa., for which it is a Philadelphia distributor.

Kalamazoo Vegetable Parchment Co.'s New Line

There has been added to the lines of paper manufactured by the Kalamazoo Vegetable Parchment Company, a new cabinet of 125 sheets and corresponding number of envelopes in the white K. V. P. watermarked bonds adapted for use of stationers and printers. The new cabinet is being distributed through the Philadelphia agents for the Kalamazoo Vegetable Parchment Company mills, the Satterthwaite-Cobaugh Company, 217 Chestnut street. There has been lately brought out a new K. V. P. Laid Bond that will augment these grades made by the manufacturers for some time. This new laid K. V. P. bond is in white only, and has also been stocked by the local paper merchants representing those mills.

Package Paper Co. In New Quarters

The Package Paper Company, which formerly occupied offices in the Bulletin Building, has removed to larger offices in the Wilford Building, 33rd and Arch streets, where several paper concerns have recently taken headquarters for the Philadelphia territory. The local branch of the Package Paper Company, of Holyoke, Mass., is devoted to the Quaker City sales representation of the lines of wax papers and printed transparent paper made in the New England paper center and is under management of H. L. Openshaw.

Safepack Mills In New Quarters

Representing the line of waterproof papers made by the Safepack Mills, of Millis, Mass., in the Quaker City territory, Ralph P. Lichtenstien has taken more modern quarters for handling these products in the newest and most up-to-date of structures, the Terminal Commerce Building, 401 North Broad street. The new quarters are located on the 6th floor of the building and comprise offices for the Philadelphia sales and warehousing facilities for stocking these waterproof products in lining and allied grades. The old quarters at 217 Walnut street have been abandoned. The Philadelphia sales manager also represents the Signode Steel Strapping Company, manufacturers of steel straps for shipping, baling and bundling purposes.

National Waterproofing's Latest Product

The line of No. 30 Kraft Duplex waterproof case linings made by the National Waterproofing Company, with Philadelphia headquarters located in the Drexel Building, are now being promoted in a direct mail campaign under direction of the head of the firm, Isaac Collins. The Kraft Duplex linings are waterproofed, strong and odorless, providing a perfect case lining where these essentials are necessary to protect contents of the cases. It is an absolute protection for shipments against moisture and dampness while in transit. The latest product in its perfected production comes in stock sizes of 200 yards to the roll of 36, 40, 48 and 60 inches, and is also furnished in any desirable sizes of rolls or sheets. It is made in the National Waterproofing Company's plant, at Camden, N. J.

A. B. Kehr Ill

Suffering from a peculiar ailment which resulted from a severe case of sneezing, A. B. Kehr, of the Enterprise Paper Company, and its subsidiary, the Paramount Paper Products Corporation, 3rd and Callowhill streets, has been confined to his home and bed for more than a week and is slowly recovering. While the origin of the illness is unique, the ailment resulting is an old one, known as sciatica neuritis. While at his place of business about ten days ago Mr. Kehr was stricken with a severe case of sneezing and strained the sciatic nerve of the spine which became seriously inflamed. He will be obliged to remain at his home, 5746 North Fairhill street, for some time.

Samuel Alcorn Adds Transella

Samuel Alcorn, for many years representative of leading paper mills, has added to his lines the Transella, a transparent product manufactured by the Transella Manufacturing Company, Milwaukee, Wis. The new product is being distributed through the local offices at 219 South 5th street. It can be used for transparent wraps, or for envelope manufacture, and for such products as those produced by the bakery and food manufacturing industries.

William P. Pease To Attend Sales Conference

William P. Pease, who represents the American Tissue Mills, of Holyoke, Mass., will journey to the paper manufacturing center of New England on December 16 to be present at the annual sales conference to be held at the mills. Mr. Pease, who is representative of the American Tissue Mills in the Philadelphia and Eastern territory south of this city, will join with the entire sales force and executives from all parts of the country attending for the year end conference and the outlining of work for the coming year. The American Tissue Mills manufacture waxed tissue and other tissues of a general character. The Philadelphia offices are located at 3754 North 18th street and have been under the management of Mr. Pease for the past year or so. He is one of the best known representatives of bags and wrapping paper specialties in this section, having been linked with the trade for more than a quarter century.

Wilkinson-Grey Co. Formed

It is announced that all the details of the amalgamation of the jobbing businesses of Wilkinson Bros. & Co. at 419 Broome street and the H. J. Grey Company at 228 East 44th street have been completed. The excellent sales force of twenty salesmen of the former company, without a single exception, combined with the entire sales organization of the latter, is united and will operate under the direct supervision of Mr. Grey.

The H. J. Grey Company on November 1 completed ten years in the paper and twine business. The organization enjoyed the confidence of a clientele that has been gained through efficient service and complete satisfaction. Since assuming control, Mr. Grey has received the support and cooperation to the fullest extent of every single member of both organizations.

Embargo On Convict Made Imports

WASHINGTON, D. C., November 26, 1930.—The Treasury Department has promulgated new regulations regarding importations of materials and commodities made abroad by convict labor. Officials of the Department deny that these regulations are particularly aimed at Russia. However, the new regulations may affect importations of pulpwood coming into this country, as it puts the proof upon the importer as to whether or not the goods are made, or have been handled by, convict labor.

Ontario Paper Mills Are Moderately Active

While Fine Paper Business Is Rather Spotty, Book Papers Are In Satisfactory Request—Coarse Paper Manufacturers Affected By General Trade Depression and Operating Lightly—Wholesale Paper Trade Considered In Fairly Good Shape

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, December 8, 1930.—Paper wholesalers throughout the province are beginning to cast up their accounts now that the year is nearing a close and many of them are finding that total sales are not a great way behind those of last year despite the business depression that has prevailed during the past several months. Not a few of the distributors find themselves agreeably surprised at the results of the year's business and while profits have not been so good their turnover has closely approximated that of 1929. There undoubtedly has been a falling off in demand of the better grade papers, the sales of which have been light for some months past. But business has pretty well evened up the call for cheaper classes in most paper lines. Business houses, for the most part, have shown a tendency to cut down on office stationery and have been using a class of paper that would not have been good enough in prosperous times. This condition still prevails, although there is a disposition now to go back to the use of the best papers—a trend that is having its effect upon the wholesale paper market. The fact remains, however, that selling is light in volume, whatever the class of paper involved, with printing and other consumer sources buying largely from hand to mouth and no one showing any inclination to put in any stock.

Wholesalers themselves are not stocking and are quite able to get good terms and service from the mills without the risk of losing out on a disturbed market. By the same token they are not in a speculative mood and will not buy heavily from the mills on the off chance of a prospective rise in price. Prices just now, however, are quite steady and there is no disruption in any line, save those that are affected by importations of cheap lines from outside countries, and these are not a particularly important factor now as the Canadian market is in a good position to combat foreign competition. All told the wholesale end of the paper trade in Ontario is in fairly good shape and is well set to take advantage of freer selling conditions when they develop early in the coming year, as expected.

Mill Trade Fairly Active

The Canadian paper mill trade is fairly active although not running anything like a hundred per cent. The fact remains, however, that mills manufacturing certain lines are operating close to capacity. One of the exceptions, of course, is the coarse paper trade which has felt the effects of the trade depression and which, together with the paper bag trade, has been operating lightly for some months. On the other hand there is an excellent call for book papers, some mills having orders a few weeks ahead—which is in marked contrast to a year ago when orders were on file providing for shipment months ahead of the date of ordering. The fine paper mills are finding business a little spotty but there is enough demand to keep them fairly active and tonnages are gradually being increased. Only a moderate amount of business is being booked ahead but current orders show a disposition toward better size and greater frequency.

The coating mills could do with a greater volume of sales and mills are experiencing some difficulty in placing tonnages of any size in view, to some extent—to the greater demand for the cheaper grade papers. The envelope trade and the paper converting trade generally is not as active as it should be and manufacturing stationers, likewise, are operating lightly. The paper box trade has had its pre-Christmas manufacturing program and it yielded a good deal less business than last year. Repeat orders have been coming in, however, and it would appear as if, generally speaking, the paper box manufacturing trade has weathered the financial gale very well. There was a falling off in demand for the usual Christmas lines of folding, corrugating and set-up boxes but the decrease only temporarily affected the general prosperity of the box makers and only a very few of the smaller operators fell by the wayside. The paper board industry is still operating lightly under the disadvantage of over-production but the turn of the year is expected to see that department on the way to resumed prosperity.

Light Weight Market Good

The light weight paper market appears to be the strongest in the paper trade. Demand for tissues, toilets and specialty lines made from tissues in the way of crepe napkins, towels, etc., is good and mills manufacturing them have been busy all season despite considerable outside foreign competition in which a considerable amount of dumping has been figuring. Sales, tonnages and profits of the light weight paper mills have kept up well during the past several months and business with them has been consistently good. Grease proof, waxing and glassine lines of paper are still moving slowly.

Burt Co. Closing Good Year

The F. N. Burt Company closes its fiscal year at the end of December. While the business of the company has reflected the period of depression to some extent, probably, it will not be nearly so marked as in the case of the majority of industries. Operations of the F. N. Burt Company are devoted mainly to the manufacture of small paper boxes, and the peak period of the year is not yet passed in view of the Christmas trade. Another department of the company's business that benefits by the Christmas and other holiday periods is the pulp novelty products of the firm. These consist of a variety of pulp toys and novelties made from moulded pulp, representing pet animals popular as low-priced gifts to children. These novelties are produced in highly attractive forms. In some groups of industries, reduction in profits this year has been of two counts, namely smaller business and inventory losses. Profits of the F. N. Burt Company will not be affected, it is stated. Purchases of raw materials are made pretty much as required and on a favorable basis.

Abitibi Sued for Heavy Damages

Sixty-three writs against the Abitibi Power and Paper Company for damages amounting to $310,237.55 have just been issued out of the Supreme Court of Ontario, at North Bay, through August Lemieux, K. C., Ottawa, acting on behalf of a large number of farmers whose lands, it is stated, situated along the Sturgeon River, in the townships of Stringer, Field, Crerar, Gibbons and Badgerow, districts of Nipissing, have been flooded and injuriously affected for several years through and by reason of the alleged negligent operation of the Abitibi Company's dam on that river. These claims, coming from 63 different farmers, vary from $1,000 to $24,000, it is stated.

Abitibi's Side of the Case

Complaints by farmers that their land was being flooded by waters from the Abitibi Company's dam have been made frequently in recent years. The Ontario Department of Lands and Forests took the stand that it was a federal matter as it involved the questions of levels and navigation. When the Government at Ottawa was approached the complainants were told

that the Dominion authorities had no responsibility in the matter. Much valuable land has been lost to cultivation through the water from the storage dam, it was stated. W. H. Smith, a director of the Abitibi Power and Paper Company, when seen, said that he had been in conference with Mr. Lemieux and had also been over the ground, whose flooding is complained of in the writs, with engineers. "I do not think the claimants have a chance," he said. "We are standing quite firm on the matter, in any case, and admit absolutely no responsibility. Settlers have made claims through Mr. Lemieux for several years on account of high water. The water of the Sturgeon River has undoubtedly been high at times, but it is high at times on all the northern rivers. After going all over the country I think we could buy up the whole township, all the farms and plants, for the $310,000 claimed as damages in the 63 writs. In the first place there were three or four claimants who wrote to us. Then they got Mr. Lemieux to act and he brought the number up to 63. He is coming to Toronto this week to talk it over with us. The cases will probably go to trial as the claimants seem to think they can collect a lot of money from us. But we don't think so."

News Print Mills for Antipodes

C. Hartlette, Canadian Trade Commissioner at Melbourne, Australia, in a recent communication to the Department of Trade and Commerce, Ottawa, referred to the proposed erection of plants for the manufacture of news print in Tasmania, Australia, by two companies. These are said to have the necessary capital and backing at their command. Mr. Hartlette points out that the establishment of the industry is mainly dependent on the assistance expected to be provided by the Commonwealth Government by way of a bonus or production of $19.47 per ton and a deferred duty on all imported paper of a similar amount to be operative when the industry had reached a productive stage. Continuing Mr. Hartlette says: "So far as the more prominent one of the two interested companies is concerned, the present financial depression in Australia appears to be unfavorable to an early beginning of the enterprise." At the recent half-yearly meeting of this company the chairman stated that the data obtained from the experimental work carried out in connection with the proposed establishment of the industry in Tasmania had given the directors confidence, but at present there were difficulties which prevented the enterprise being launched.

Notes and Jottings of the Trade

The two new sixty-inch beaters that the Interlake Tissue Mills Company is adding to its equipment at its plant at Merritton, Ont., are now about installed, while a new switchboard room, for the purpose of centralizing all its electrical controls, has been erected.

The Winnipeg Club of Printing House Craftsmen recently visited the Manitoba Paper Company plant at Pine Falls. They left Winnipeg by train in the morning and returned in the evening. The trip through the plant proved very interesting and instructive.

The Central Section of the Canadian Paper Trade Association is to hold a meeting in Montreal some time this month, the date yet to be announced. The central section of the association comprises the provinces of Ontario and Quebec.

The Westminster Paper Mills was recently honored by a visit from nearly sixty leading business men of New Westminster, B. C., who formed part of a delegation from the Kiwanis, Rotary and Gyro service clubs who were on a tour of some of the leading industries of the Royal City. After seeing the making of fine paper from wood pulp, the visitors witnessed the diversified products of the finished plant. Colored, waxed, tissue, and crepe papers of all kinds were shown to the delegation in the stock rooms.

The Supreme Court of Nova Scotia held, in a recent judgment announced at Kentville, that subscription to a stock issue compelled acceptance. This stand was revealed in a verdict for $1,000 awarded the Minas Basin Pulp Company, with pulp mill at Hantsport, against A. E. Regan, of Wolfville. The plaintiff company claimed the defendant had subscribed to a certain number of shares of stock, totalling $1,000, but had refused to accept these shares when they were delivered to him. The case was heard by a jury at Kentville, the decision going to the plaintiff firm.

The December, and second, issue of "The Alliance Coater," a monthly message to users of coated papers sent out by Alliance Paper Mills, Ltd., 350 Bay street, Toronto, contains an interesting article by the editor, N. B. Powter, of the advertising department, on "Water in the Air Will Mean Dollars in your Pocket." A calendar card enclosed contains in its letter press an interesting description of the mixing room of the company's mill at Georgetown.

Dr. Howe, Dean of the Faculty of Forestry, University of Toronto, states that in the 22 years' history of the school every graduate had secured a position. Nearly two-thirds of the graduates had either entered the provincial branch of Ontario or the Dominion forestry service. The others had been absorbed by private pulp and paper companies. Dean Howe considers it poor business and non-ethical to allow more students to enter the first year than there will be openings for on graduation and accordingly the entrance requirements have been increased this year.

Paper Demand Fairly Active In Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 8, 1930.—Little change is seen in the paper demand here. There are sales being made and the orders seem a little more active in the fine paper market, but in all lines orders call for relatively small amounts and the users are buying only what they have to have in spite of a favorable price range.

Naturally with the approach of Christmas tissues are more in demand, but it is doubtful if the volume will be greater than that of last year. Most of the fancy wrapping paper has been sold to the manufacturers who specialize in holiday merchandise, but the department stores and domestic consumers yet have considerable buying to do.

Some sales are being made in the board market, but the volume is not what it should be and prices generally are low. Virtually all demand for building papers has ceased and little is expected until after the first of the year. Stocks in the hands of dealers are light and will be held so until after the inventory period.

The paper stock market is very dull. Local paper stock houses are buying steadily and are selling only when lack of room makes space the predominant factor. The local warehouses are full to overflowing and some of the houses are seeking other storage quarters while waiting for a better price list.

Demand for news print is a little stronger. Much of this is due to heavier advertising prior to the holidays. The demand during this month promises to be much better than for November, merchants beginning to boost their Christmas merchandise immediately after Thanksgiving.

Norma "GreaSeal" Bulletin Issued

Norma-Hoffman Bearings Corporation, of Stamford, Conn., have just published an illustrated catalog describing the latest development in anti-friction bearings—the Norma-Hoffman "GreaSeal" Felt-Protected Ball Bearing.

In the "Norma" "GreaSeal" Bearing, the felt closure is an inherent part of the bearing itself—a fixed part of the bearing unit. The "Norma" "GreaSeal" Bearing employs the highest grade of white felt impregnated with lubricant at the time of assembly; the bore of the felt rides snugly upon the cylindrically ground outer surface of the inner ring, providing thoroughly efficient and lasting protection. The "GreaSeal" Bearing is self-sealed, grease-packed and dirt-and-moisture proof.

Chicago Paper Market Conditions Improving

Better Grades of Fine Papers Continue In Excellent Request — Coarse Paper Manufacturers Report Increased Business—Continuation of Stabilization Policy In Kraft Division Responsible For Better Feeling Generally Experienced

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 6, 1930.—Little change has been noted in conditions in the Chicago paper market over those of last week. Of chief importance, according to reports, is the continuation of a stabilization policy in the kraft market, a condition which is bringing about better feeling and which seems to indicate that the bottom has been reached. Jobbers of coarse papers are also reporting an increase in business which may turn into a substantial improvement after the first of the year. Commitments in all lines are now being made for next year which seem to indicate that a healthy improvement should be noted, even in the early months of 1931. The board market still shows a further need of cooperation among members of the industry, as evidenced by reports, even though the uses of board in its various forms are continuously increasing. Over production weeded out would cause a decided stimulus in this market, say those questioned. The better grades of fine papers are perhaps leading the way in what business there is going on at this time. A substantial improvement in general business and the beginning of next years programs are causing a fair demand for advertising papers. News print representatives are also taking heart at the up turn in business. Waste papers are much the same as last week with the higher grades showing the most activity at this time.

Sutcliffe Addresses Paper Salesmen

The Chicago Division of the Salesmen's Association of the Paper Industry at its regular Monday meeting on December 1, had the opportunity of hearing Mr. Sutcliffe, European field representative of the Import Committee talk on European conditions and on general work of the committee. Mr. Sutcliffe has, according to Harold Knott, president of the local division, just spent nine months in the European countries. He indicated that France was, at present, in far the best condition of any country in Europe and that both England and Germany were having a hard fight overcoming present economic conditions. The Import Committee representative also discussed the work of the committee pertaining to misclassification of imports and to anti-dumping measures—both of which are of unusual interest to the association and which were reasons for the action of the association in working for the development of this European representation some time ago. Much good is being accomplished in insuring the correct classification of imports. Mr. Knott announced that the next meeting of the association would continue with the round table discussions on differentials which are attracting widespread interest among the members.

Outlook for Container Industry

Some important observations on the container industry made by Grafton Whiting, statistician, before the November meeting of the Paperboard Industries Association, have been mailed out from the Chicago offices by the association because of their bearing on present conditions. The container industry's position at this time is outlined as follows by Mr. Whiting: "The growth of the industry this year has practically offset the depression from a volume standpoint. Few other industries are in such a fortunate position but this has been lost sight of and a further loss of profits is clearly in evidence for the year 1930. The present depression and falling price levels extending back for nearly three years have not been without some gain. Box manufacturers have been forced to reduce costs, increase plant efficiency and to give better service to customers. With this as a background, the next turn in general business will find the container industry in a far better condition than ever before, but efficiency in operation can be completely nullified by inefficiency in merchandising. It is essential that co-operation be brought to bear within the industry to put its own house in order. The Paperboard Industries Association, with its sales promotion activity to insure continued growth and its members currently supplied with the facts about conditions, is the means through which co-operative efforts can be made effective. With the depression pointing downward for the past fourteen months, considering the depth to which it has dropped there is a promise of an upturn early in 1931 and two or more years of prosperity with rising commodity prices and better profits. The container industry will share in this change, but the extent to which its net profit will improve is dependent upon the action taken by its individual members."

Mr. Whiting also made the statement that "in fact of the extraordinary growth that has taken place in the industry there is lacking a definite sales policy and the ability to merchandise at a profit. Some of the increased output in 1929 was undoubtedly due to lower price levels, but it would have been better business to have sacrificed the volume from this source and to have maintained prices and avoided the $1,800,000 loss in profit. This year the growth in the industry has been taken for granted and when activity dropped off to a point where the volume was insufficient to keep the new and faster machines fully occupied, the sales price was blamed and a renewed price cutting program was begun." From the Chicago office of the association, and included as a part of Mr. Whiting's talk, came a discussion of liner board consumption, production volume average sales price and volume and price that are of interest to the entire trade.

News of the Trade

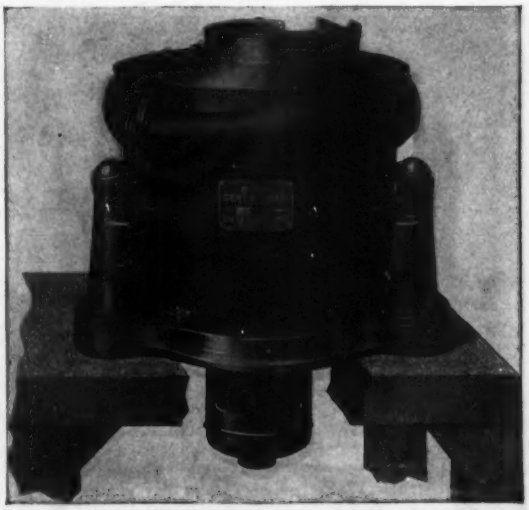
The Chicago Paper Company has made use of a striking calendar to advertise a specimen of Offset Printing produced on Arrow Offset, featured by that organization. The illustration on the calendar is called "Pretty Polly" and is a vari-colored production of a young lady holding a parrot that certainly demands the attention of the receiver. It is of unusual use in bringing out the qualities of Arrow Offset and is equally, if not more, effective than any long detailed copy description of the qualities of the product.

Number 3 of the series on Oxford Papers, sent out by Bermingham & Prosser, Chicago distributors, contains very little advertising copy but a striking selection of advertising illustrations interspersed with the words "Whether they are keen-eyed, shrewd and thrifty, or prodigal and spendthrift, the men and women at the consumer end of the business are the ones who eventually decide your fate." White illustrated Oxford Polar Coated is the stock on which the broadside is printed.

"Say—Wait a Minute, Joe," is the leading title of the Chicago Paper Company's latest broadside advertising Warren's Papers carried in stock regularly. Attention is called to Warren's Estimators Reference Book and the breezy copy carries out the title of the broadside by referring to Joe, a press man, who is suddenly ordered to increase the quantity of the printed job and can take care of the emergency because standard size sheets of standard paper have been used on the job and are readily available.

As Logical as the Liking for a WELL-GROOMED CAR -- the Demand for Centrifined Paper

The cleaner a thing is, the better men like it, whether it's a shirt, a cigar, a paper mill - or a sheet of paper. Cleanliness is a national habit. Can you blame paper users for obeying that habit and demanding cleaner and cleaner paper? They know, now, that paper can be really clean, free from the specks and blemishes once thought unavoidable. This new quality paper offers a strong appeal. They like it, buy it. Our business is to help you equip your mill to give these buyers what they want -- really clean, Centrifined paper. Let us show you how Bird Centrifiners will strengthen the position of your mill. Write for complete information. Bird Machine Company, South Walpole, Massachusetts.



Manufactured under license from Centrifugal Engineering & Patents Corp., owners of the Erkensator Patents.

THE BIRD CENTRIFINER

4542

Tomahawk Pulp Mill to Resume Operations

Arrangements Completed Whereby Local Capitalists, Headed by Mayor Frank Theiler, Will Take Over Plant of Defunct Organization at Kings Dam — Mill has Been Closed Approximately One Year and Is Being Rapidly Overhauled

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 8, 1930—Capitalists of Tomahawk, Wis., and vicinity have completed arrangements to take over the pulp mill of the defunct Tomahawk Pulp and Paper Company, and expect to start operations within about ten days. These men, headed by Mayor Frank Theiler, of Tomahawk, have taken over the pulp mill at Kings dam and expect to place about fifty men at work. The mill was closed for nearly a year and is being overhauled preparatory to operations.

Kaukauna, Dam to be Rebuilt

An appropriation amounting to $138,460 will be asked of the present congress for reconstruction of the water power dam at Kaukauna, Wis., where several paper mills are located. It is stated in the report of the United States engineering department that the timber on the dam is badly decayed, and that the dam itself is not adequate for maximum flood capacity discharge. The dam will be rebuilt with concrete, and expensive repairs to the wooden dam therefore will be avoided.

During the last fiscal year, the government spent more than $160,000 on improvements on the Fox River, on which the Kaukauna dam is located. Reconstruction of the Rapid Croche dam, below Kaukauna, at a cost of $109,000 was the largest item. Considerable dredging and repairing also have been done so the power and navigation facilities will be ample for any situation.

Safety School Sessions Well Attended

Employees of paper mills in Stevens Point are attending the safety school sessions there in large numbers. The final session is scheduled for December 15, ending one of the most successful years in this work. The speaker last week was R. G. Knutson, of the Wisconsin Industrial Commission. He mentioned the necessity of thinking safety at all times. He urged foremen to be an example to the men under their charge. If foremen violate safety rules, the men cannot be expected to do anything else. Immediate care for injuries was a point he also urged.

Power Dams to Maintain More Water

A greater head of water will hereafter be maintained at the power dams along the Wisconsin River by the Wisconsin Valley Improvement Company, according to a decision made known by officials to Izaak Walton Chapters in that vicinity. The company is made up of paper mill owners having water power sites along the river, and its purpose is to maintain uniform policies with respect to control of flowage. During low water stage last summer, thousands of fish left in holes along the river bottom when the waters receded were killed. About 100,000 were liberated by workers of the Wisconsin Conservation Commission. This condition was blamed to the fact that the improvement company held back too much water and an investigation resulted in a voluntary proposal to remedy the situation.

News of the Industry

F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, Neenah, Wis., was one of those who had a prominent part in welcoming the new Archbishop of Wisconsin, His Grace Samuel A. Stritch, to Milwaukee. A mass-meeting was held recently at the Milwaukee auditorium to honor the newly appointed head of the Catholic Church in Wisconsin. Mr. Sensenbrenner is a Knight of St. Gregory, the highest honor the church can confer on a layman, and was thus honored several years ago because of his service to the church.

Moore and Munger, clay dealers, have provided a $500 scholarship at the Institute of Paper Chemistry at Lawrence College, Appleton, Wis., according to announcement of G. T. Keating, general manager. The scholarship has been awarded to E. D. Amstutz, a graduate of Wooster College, Wooster, Ohio, who is a student at the institute.

A final estimate of the damage done during a recent fire at the George A. Whiting Paper Co., Menasha, Wis., places it at $1,400. Most of this was caused by water from the automatic sprinkler system, which operated automatically when the fire broke out.

Ohio Superintendents Meet in Middletown

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 8, 1930.—A number of paper mill superintendents from Dayton, Franklin, West Carrollton, Lockland, Piqua, Cedarville, Hamilton and Middletown, attended the last regular meeting of the Paper Mill Superintendents' Association held at the Florentine Shop in Middletown.

The principal address was delivered by A. J. Wildman, of the Beckett Paper Company, Hamilton, on the subject, "Beater Room Control."

Mr. Wildman had his subject well in hand and as it was one of intense interest to all those in attendance, the meeting was voted a practical success.

M. L. Barker, Hamilton, chairman, announced the next meeting would be held in Miamisburg on January 12. Miamisburg has two progressive paper mills. It is a town of about 5,000 inhabitants and is located 10 miles south of Dayton. Mr. Barker, like the speaker, is connected with the Beckett Paper Company. That concern was represented by a full attendance of foremen as was the Champion Coated Paper Company.

H. I. LeFevre Has Narrow Escape From Fire

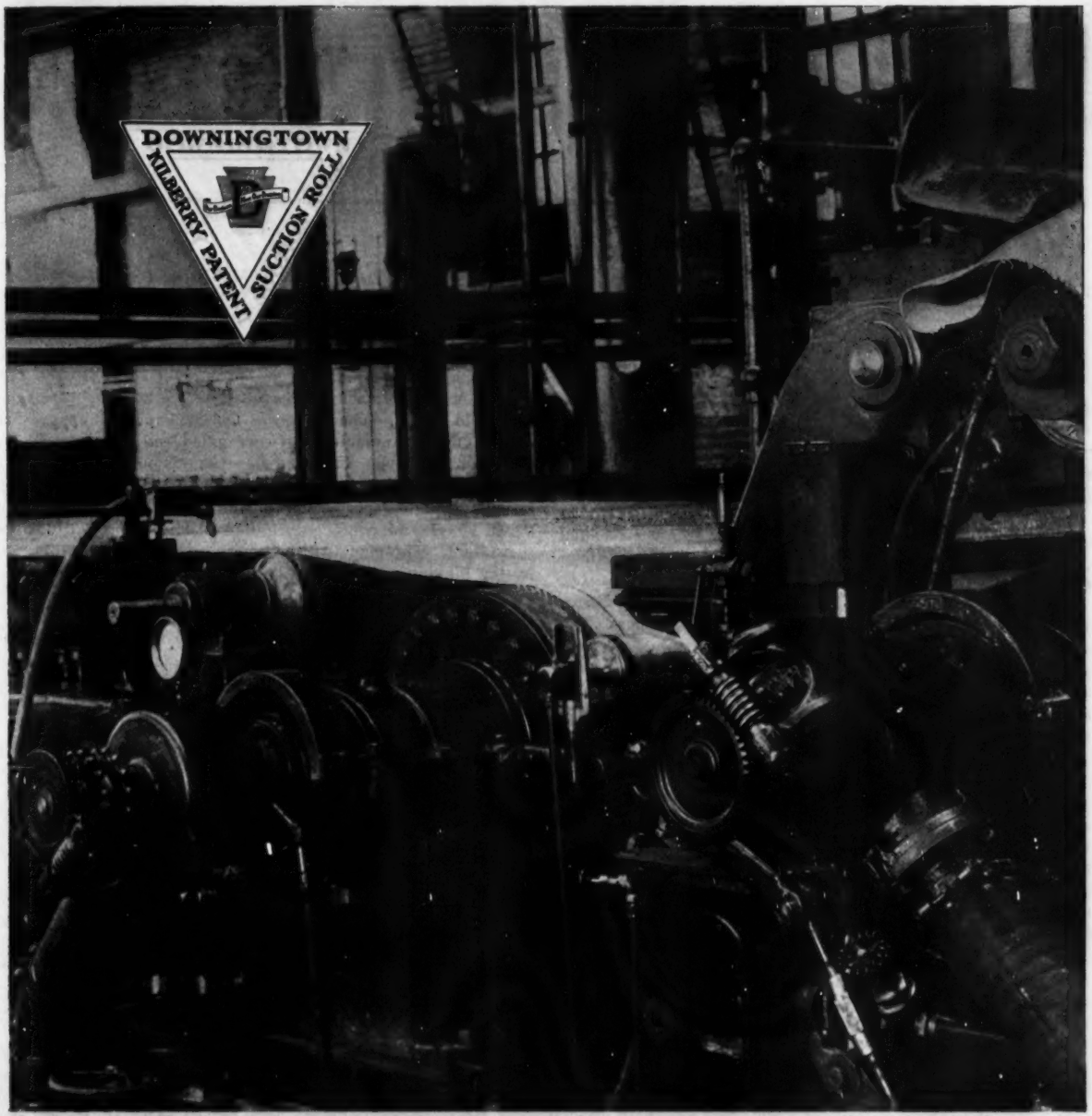
[FROM OUR REGULAR CORRESPONDENT]

BEAVER FALLS, N. Y., December 8, 1930.—Howard I. LeFevre, president and treasurer of the Lewis, Slocum & LeFevre Paper Company, had a narrow escape from death this week when flames destroyed his home here with a complete loss. Protected from zero weather Mr. LeFevre and family managed to escape from a second story window just before the fire reached that section of the building. They suffered much from the wintry winds and exposure and soon after reaching safe ground the mill man collapsed. Later he was taken to the home of Harry Lewis, a member of the firm, where physicians said that he would suffer no serious results. Mr. LeFevre had only recently recovered from a severe attack of illness and it was feared that exposure to the cold would cause a relapse.

Zellerbach Interests Get Paper Mill Permit

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 6, 1930.—Zellerbach Paper interests and George Cameron, newspaper publisher of San Francisco, have been granted a permit on their application filed with the federal power commission several months ago in which they asked to construct pulp and paper projects in Alaska totaling an investment of $30,000,000. Combined production will be 365,000 tons of newsprint annually.



If it is difficult to meet competition, with your paper machines which were built years ago, it will pay you to investigate the Downingtown Adjustable Suction Roll for couch and press purposes. Mills that have installed Downingtown Suction Rolls have increased their profits. For further information address the Downingtown Manufacturing Company, Downingtown, Pennsylvania.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chicago, Ill.—In an item on page 32 of the PAPER TRADE JOURNAL of November 27, it was inadvertently stated that the Seaman Paper Company was a subsidiary of the Whitaker Paper Company. This is obviously an error. The Seaman Paper Company, Chicago, writes as follows regarding this: "The Seaman Paper Company last August sold to the Whitaker Paper Company its stock and warehouse business representing a very small portion of the annual business of the Seaman Paper Company. The Seaman Paper Company remains one of the largest paper houses in this country after selling its comparatively unimportant local warehouse and stock business. The main offices of the Seaman Paper Company are in Chicago. Several notices have appeared in trade journals and daily newspapers which have had a tendency to give the impression that the Seaman Paper Company had sold its Chicago business to the Whitaker Paper Company. These notices have done this company a great deal of harm. The Seaman Paper Company has sold only its stock and warehouse business to the Whitaker Paper Company in Chicago; the main offices of the Seaman Paper Company, which has always been primarily a tonnage house, are in Chicago, and the Seaman Paper Company among its other connections is the sole distributor for the United States of the book papers of the Consolidated Water Power and Paper Company, the Tonawanda Paper Company, the French Paper Company, and is the sole distributor of the products of the Deerfield Glassine Company."

Port Huron, Mich.—The Port Huron Sulphite and Paper Company has tentative plans under way for a new steam-operated electric power plant at its mill, to be used for service at the plant, estimated to cost close to $400,000 with equipment. It is proposed to begin work within four to six months. The company has concluded negotiations for the purchase of a tract of about 12 acres of land adjoining its plant, and will use a portion of the site for the proposed power station. E. W. Kiefer is president.

Rumford, Me.—The Oxford Paper Company, Rumford, is said to have plans in progress for a new addition to its mill for increased service, reported to cost close to $80,000, with equipment. It is understood that work will be placed under way at an early date.

Philadelphia, Pa.—The John Crompton Adelphia Corporation, 145 West Columbia avenue, manufacturer of paper boxes and containers, cartons, etc., has approved plans for a new addition to its plant for enlarged output. General contract has been awarded to the Haverstick-Borthwick Company, 1505 Race street, and work will be placed under way at once. It will be four-story, located at Palmer and Mascher Streets, estimated to cost over $70,000, with machinery. J. Fletcher Street, 1120 Locust street, Philadelphia, is architect.

Indianapolis, Ind.—Fire recently damaged the local branch plant of the Philip Carey Company, 1111 East 19th street, manufacturer of insulating products, roofing, etc. An official estimate of loss has not been announced, but is reported at $10,000. The damage will be replaced. Headquarters are at Cincinnati, Ohio.

Buffalo, N. Y.—The Hinde & Dauch Paper Company, Sandusky, Ohio, manufacturer of corrugated and fibre board boxes and containers, has concluded negotiations for the purchase of the plant and business of the Buffalo Box Factory, 30 Scoville avenue, Buffalo, specializing in the production of corrugated paper boxes and containers, and will consolidate with its organization. The plant will be continued at the present location by the purchasing company, and will be operated as one of its branch factories, now located at different points throughout the country. It is understood that an improvement program will be carried out to accommodate increased output at a later date. There will be no change in management at the Buffalo plant, continuing under the direction of James B. Fenton, heretofore president of the company, who will act as manager under the new ownership.

Longview, Wash.—The Weyerhaeuser Timber Company, Tacoma, Wash., has awarded a general contract to Christopher Kuppler Sons, Port Angeles, Wash., for the construction of a new mill at its properties at Longview, and will equip for the production of bleached sulphite pulp. Work will be placed under way at once and pushed to completion. The new unit is reported to cost over $200,000, with equipment.

Cincinnati, Ohio—The Chatfield & Woods Company, 227 West Third street, paper products, affiliated with the Chatfield Paper Corporation, same address, has awarded a general contract to the Leibold-Farrell Company, Schmidt Building, for proposed new building on Arbor avenue, Norwood district, to consist of a one and two-story unit, estimated to cost over $60,000, with equipment. Work will be placed under way at once and miscellaneous subcontracts have been let for plumbing, heating, electrical and other completion work. It is understood that company will remove present plant to new location and increase capacity. John Henri Deekin, 15 East Eighth street, Cincinnati, is architect.

Cambridge, Mass.—The F. W. Webster Company, 340 Congress street, Boston, Mass., manufacturer of carbon papers, typewriters supplies, etc., has superstructure under way for a new multi-story plant at Amherst and Hayward streets, Cambridge, to provide for large increase in capacity. It will cost over $400,000, with equipment. Company will concentrate operations at new location and will carry out an expansion program there. All miscellaneous contracts have been let for completion, and it is understood that the unit is expected to be ready for occupancy in the spring. Densmore, LeClear & Robbins, 31 St. James avenue, Boston, are architects.

Dallas, Tex.—The Paper Excelsior Packing Corporation, Dallas, recently organized by E. L. Bristor, 815 South Montreal Street, Dallas, and associates, is planning operation of a local storage and distributing plant for paper waste and packing.

Bucksport, Me.—The Maine Seaboard Paper Company, organized a number of months ago by officials of the Maine Cen-

Specified For

*Maine Seaboard Paper Co.
Marshall Bros. Inc.
Monadnock Paper Mills
Moyer & Pratt
*Oxford Paper Co.
Puget Sound Pulp & Timber Co.
*Reading Paper Mills
Schmidt & Ault Paper Co.
Schweitzer, Peter J. Inc.
Scott Paper Co.

* *Now in process of construction*

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*Crocker Burbank & Co.
Draycott Mills, Inc.
Eastman Kodak Co.
Hollingsworth & Vose Co.
International Paper Co.
Island Paper Co.
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ROSS SYSTEMS
HEATING—VENTILATING—DRYING

tral Power Company, 317 Water street, Augusta, Me., W. S. Wyman, president, has completed the construction of its new mill at Bucksport. A trial run has been made, and the plant will be placed in regular service. It will be given over to the production of news print, and will have a rated maximum of 300 tons per day. When running full the plant will give employment to about 275 persons. The construction work was carried out by the Morton G. Tuttle Company, 31 St. James street, Boston, Mass.; plant consists of a number of structures and is said to represent an investment of over $4,000,000, with machinery. George F. Hardy, 309 Broadway, New York, paper mill engineer, designed the plant. In connection with this mill, the Maine Central Power Company is constructing a new hydroelectric generating plant on the Kennebeck River, near Bingham, Me., a considerable portion of the output to be used for service at the paper mill. The same contractor, Morton G. Tuttle Company, is in charge of this development, which will cost over $5,000,000, with transmission system, power dam, etc.

Fort Wayne, Ind.—The Fisher Brothers Paper Company, 118-20 West Columbia street, is said to be arranging immediate call for bids on general contract for a new storage and distributing plant; to be three-story, with basement, 30 x 150 feet, estimated to cost more than $50,000, with equipment. A. M. Strauss, Cal-Wayne Building, Fort Wayne, is architect.

Richwood, W. Va.—The Cherry River Paper Company has resumed production at its mill following a shut-down of about five months, due to shortage of water for operation, resulting from the drought. Snow and rains in the past few weeks have replenished the water supply, and the plant will be operated on a regular production schedule for an indefinite period. It is giving employment to over 350 persons.

Stockton, Calif.—The Fireboard Products, Inc., an interest of the Crown-Zellerbach Corporation, San Francisco, Cal., is holding to a good production schedule at its different mills and giving employment to sizable working forces. The company has been giving concerted attention to experimental work for the development of fiber board containers for different merchandise. The company specializes in the manufacture of boxboard, corrugated and fiber shipping cases, as well as egg case fillers and kindred specialties. In addition to the Stockton mill, plants are now in operation at Antioch, Vernon and Los Angeles, Cal.; Port Angeles and Sumner, Wash., with a combined gross output of 750 tons of box board products daily. Company is also operating converting mills at these different points, and has a similar mill at Philadelphia, Pa., where the plant and business of the Federal Container Company was purchased a number of months ago. It is said that incoming business assures present rate of output at the different mills for an indefinite period.

Montreal, Que.—Plans are said to be maturing for a merger of the Abitibi Power and Paper Company, Ltd., with mills at Fort William and other points in Canada, and the Canada Power and Paper Corporation, likewise operating a group of newsprint mills in Quebec. The consolidation is expected to bring about a number of economies in production at the different plants, and sources of power supply.

Brooklyn, N. Y.—The Equitable Paper Bag Company, 314 Scholes street, Brooklyn, manufacturer of paper bags and containers, has arranged for an increase in capital for $50,000 to $200.000, for general expansion.

Finnish Markets Slow and Prices Low

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 8.—The Finnish news print and wrapping paper markets are slow with prices for the latter showing a downward trend. In the chemical pulp and board markets no changes are noticeable. Wood pulp contracts are being placed for immediat edelivery and for 1931 and 1932 shipments, but at unsatisfactory prices.

A New Type of Box

An entirely new principle in box-making is employed in the Simplex Box, a new paper container placed on the market by the Dennison Manufacturing Company, Framingham, Mass. This new box contains all of the desirable features of the stiff box plus the great saving in space and cost due to its collapsible features. In other words, the Simplex is absolutely new and different.

In appearance and construction this new box, when setup, cannot be distinguished from the regular stiff box. However,

A NEW BOX WITH COLLAPSIBLE FEATURES

a patented feature permits folding this box in such a manner that it actually occupies only one-fifth of the space required for an ordinary box.

The most remarkable thing about the Simplex is the ease with which it is set up. Anyone can do it in a few seconds and the result is a neat attractive container that provides adequate protection for most any kind of merchandise.

The Simplex Box is patented. Its features are so unique and practical that it should prove a distinct advantage to many box users.

Rates on Pulpwood Not Unreasonable

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930.—Rates on pulpwood in carloads, from Canadian points to Thomson, N. Y., have not been found unreasonable by the Interstate Commerce Commission but unduly prejudicial. Non prejudicial basis has been prescribed for the future. This decision was rendered by the Commission in the case of the Iroquois Pulp and Paper Company against the Canadian National Railways.

In the case of the Schroon River Pulp and Paper Company against the Delaware & Hudson the Commission found that the rates on bituminous coal, in carloads, from mines in Pennsylvania and West Virginia to Warrensburgh, N. Y. are unreasonable. Reasonable rates were prescribed and reparation awarded.

A decision has also been rendered by the Commission in the case of the same company against the same road in which the Commission found that the rates on steam size anthracite coal, in carloads, from Scranton, Pa., and points grouped therewith to Warrensburgh are unreasonable and unduly prejudicial. A lawful rate was prescribed.

Joins Forest Products Laboratory

MADISON, Wis., November 17, 1930.—Dr. Elwin E. Harris, for the the past seven years professor of organic chemistry in the University of North Dakota at Grand Forks, has joined the Derived Products section of the U. S. Forest Products Laboratory here. Dr. Harris will be engaged in the Federal laboratory's investigation of lignin which has just been inaugurated on an intensive basis.

His work for the M. A. and Ph. D. degrees was completed at the University of Minnesota.

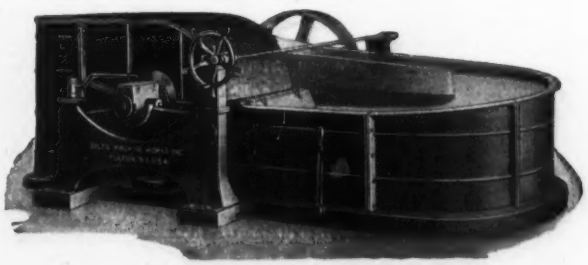
ECONOMICAL PERFORMANCE

MANY users of Dilts Beating Engines tell us very interesting facts about the savings they have noted in time, power and repair bills since installing Dilts Beating Engines and Dilts Bandless Beater Rolls.

After all, it's economy in operation, economical performance that makes for profits, whether it is economy in the Sales Department, Purchasing or Production units. A dollar saved in costs of operating is a dollar more in profits at the end of the year.

Dilts New Type Beating Engines will save money for you in your Beater Room, because they perform economically — do their work faster, more thoroughly, and because they are built to give a better service without interruption.

We will welcome the opportunity to discuss with you, your Beater Room needs. Get our recommendations.



— Dilts —

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made in Your Beaters"

POWER PLANT SECTION

REDUCING POWER COSTS THROUGH UNIT TREATMENT

Conducted by Reginald Trautschold Consulting Engineer

Burning Pulverized Coal *

In Which Paper Mills Lead All Industrial Plants

The burning of coal in pulverized form, as is being done in a good half of all the modern high pressure steam plants serving pulp and paper mills, has done far more to promote advance in the operation of the steam and power plant than any other innovation during the past ten or twelve years. In a sense, the refinements of laboratory methods of fuel testing and analysis have been applied to commercial practices in steam and power generation, with the result that highly important developments in steam generating equipment and in boiler furnace construction have been achieved. Much of this improvement has really little to do with the form in which the coal is burned; whether in a finely powdered condition for use in pulverized fuel burners, simply coarsely crushed for combustion in suspension in a rising column of heated air (the most recently developed of coal burning systems) or in larger sizes suitable for burning on grates and automatic stokers; but is concerned primarily with advance in boiler and furnace constructions.

The burning of pulverized coal, which is simply a regular preliminary process in laboratory analyses and determinations placed upon a practical commercial scale, has made it possible, however, to learn much regarding the requirement for efficient fuel combustion in the boiler furnace and also much about the effective utilization of the heat liberated. Simply the preparation of the coal in a form greatly facilitating combustion has had a good deal to do with the control of wastes and the curtailment of inefficiencies not so readily apparent when the fuel is burned on grates or stokers. This does not necessarily mean that burning coal in pulverized form has proved the most effective and economical method, but rather that in so doing it has been possible to elevate the art of coal burning to a much higher plane, to handle combustion air more intelligently and to minimize certain heat losses formerly held to be largely unavoidable. In short, the development of pulverized coal burning systems has afforded opportunities for effecting marked improvements, both in effective heat liberation (combustion) and heat utilization.

Coal Preparation

Complete combustion, the objective of any combustion system, necessitates the gasification of all the fuel, obviously, and the pulverization of the coal is simply an aid to this end. Consequently, if the breaking down of the coal is to be performed by mechanical means, the finer the coal is powdered, the greater is the combustion aid rendered by pulverization. The pulverization does not actually gasify the coal, of course, but it greatly increases the amount of fuel surface area exposed to the combustion air. For example, a cubic inch of coal ground to a fineness which will allow from 60 to 75 per cent. of it pass through a 300 mesh screen has its exposed surface increased about five hundred times.

There is a practical limit to the fineness to which the coal can be pulverized, naturally, beyond which the expense entailed for finer pulverization is not warranted by the increased aid secured in combustion, but this limit is far less elastic than is generally realized. A measure which is entirely feasible of attainment from a practical standpoint is for "fine" pulverization; 85 to 95 per cent. through a 200 mesh and 60 to 75 per cent through a 300 mesh screen, or sieve. Coal ground to such fineness will contain a generous proportion of "superfines," impalpable powder, of great assistance in effecting and maintaining complete combustion.

The presence of a sufficient proportion of superfines in the fuel exerts, moreover, a good deal of influence upon the construction of the boiler furnace, for when the coal contains a plentiful content of superfines, the flame formed when the fuel is burned under suitable pressure is usually noticeably shorter, more uniform in appearance and brighter in color than when there is a lack of superfines. Also the combustion is more "smokeless." When the coal powder consists chiefly of coarser particles, even though relatively finely divided, the flame is lighter in color, more transparent and contains bright sparklers of burning fuel, the larger pieces sometimes falling from the flame and continuing to burn on the floor of the com-

Courtesy: Strong-Scott Mfg. Co.

FIG. 1

Four 1,000 hp. boilers fired on pulverized coal at the Great Lakes Paper Co., Ltd., Fort William, Ont., with side and rear furnace walls water cooled and front wall air cooled

* For previous discussions on burning pulverized coal see PAPER TRADE JOURNAL, Feb. 28, 1929, and Oct. 31, 1929

DON'T LET AN OLD PREJUDICE STAND IN YOUR WAY

IF you have had experience with any of the old type rotary screens . . . . and hold a prejudice against rotary screening because the old machines couldn't turn out clean pulp . . . the time has come to completely dispel that prejudice.

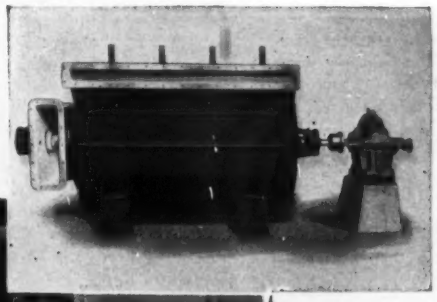
Because . . . . the Valley-Thune Rotary Screen has proved conclusively and convincingly that it can clean sulphite and sulphate pulp comparable with the finest of flat screens.

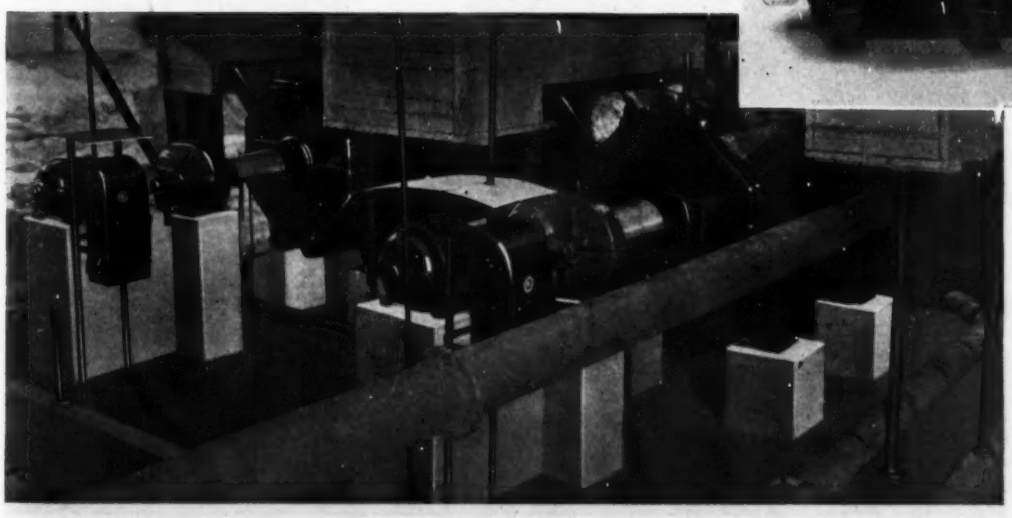
The Valley Thune Screen uses SLOTTED PLATES—a feature not in use on any other Pulp Screen.

Think of what this means! A proven rotary screen! Consistently clean pulp! . . . . and with it, all the long recognized advantages of much lower upkeep . . . . less noise and vibration . . . . no overflow or leakage . . . . less floor space . . . . greater capacity, etc.

If you are on the constant lookout for cutting expenses in your mill—you certainly have reason to pause and be interested here. Because here's a machine that can place your screening operations on a new profit basis.

Definite facts regarding what this improved screen is accomplishing in other mills will be sent to you upon request. Write the Valley Iron Works Company, Appleton, Wis.





VALLEY

Equipment for Paper and Pulp Mills

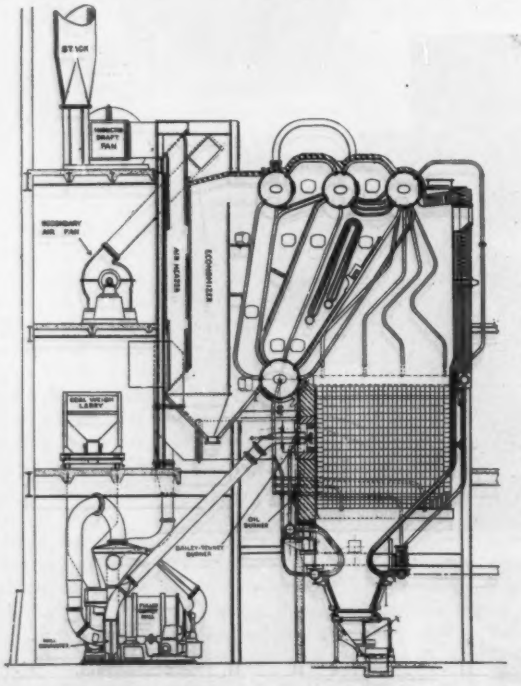
New York Office: 350 Madison Ave.
Western Mfg. & Sales Div.: Smith & Valley Iron Works, Portland, Ore.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

bustion chamber. Occasionally, the coarse particles which pass through the flame are chilled before combustion is completed and this is a cause of both a dark smoke and a loss of carbon in the ashes.

The longer flame resulting from the coarser fuel and the delayed completion of combustion this signifies are factors which introduce complications in the matter of furnace linings and settings. While the short, intense flame created when burning finely pulverized coal containing a generous proportion of superfines serves to sustain high temperature and to resist rapid heat removel by heat absorbing surfaces, even without hot refractory control, the longer flame from coarser coal aggravates the erosion and melting of furnace walls and boiler settings. As a result, where a short, bright and uniform flame can be maintained, an indication of a finely pulverized coal supply containing ample superfines, no particular precautions are necessary to safeguard good refractory furnace linings, but where such condition is not realized, which is more apt to be the rule than the exception, the success of the installation hinges largely upon the protection provided in the way of water walls, effective air cooling of the refractory and like methods of curtailing furnace deterioration.

It is not the intention to enlarge upon how the desired fineness in coal preparation may be effected nor upon the various types of mills and pulverizers now obtainable for the operation, important as is the proper selection for each particular installation of pulverized coal burning, for the latter question is one in which the interested establishment must concern itself. There are numerous types and varieties of approved pulverizing equipment on the market and these, most certainly, should be carefully investigated by every pulp and paper mill contemplating the installation of a pulverized coal burning system.

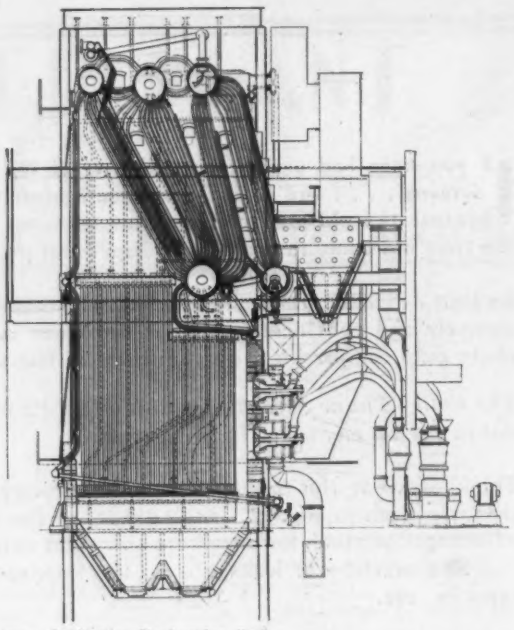
A suitable supply of pulverized fuel being provided, the questions of air control and burner operation may be taken up, entailing an appreciation of results secured in actual practice as well as familiarity with the essential equipment. These questions are no



Courtesy: Fuller-Lehigh Co.

FIG. 2

Arrangement of boiler and pulverized coal burning system at the Paul A. Sorg Paper Co.



Courtesy: Combustion Engineering Corp.

F.G. 3

Cross section through horizontally fired furnace, showing turbulent type burners and direct firing

less important than is that of the correct preparation of the fuel, for the control of the air, primary and secondary, for handling the fuel and for combustion, are phases of the heat liberation problem of prime importance. Also, there is the problem of drying the coal, a question more intimately associated with the preparation of the fuel than with its utilization.

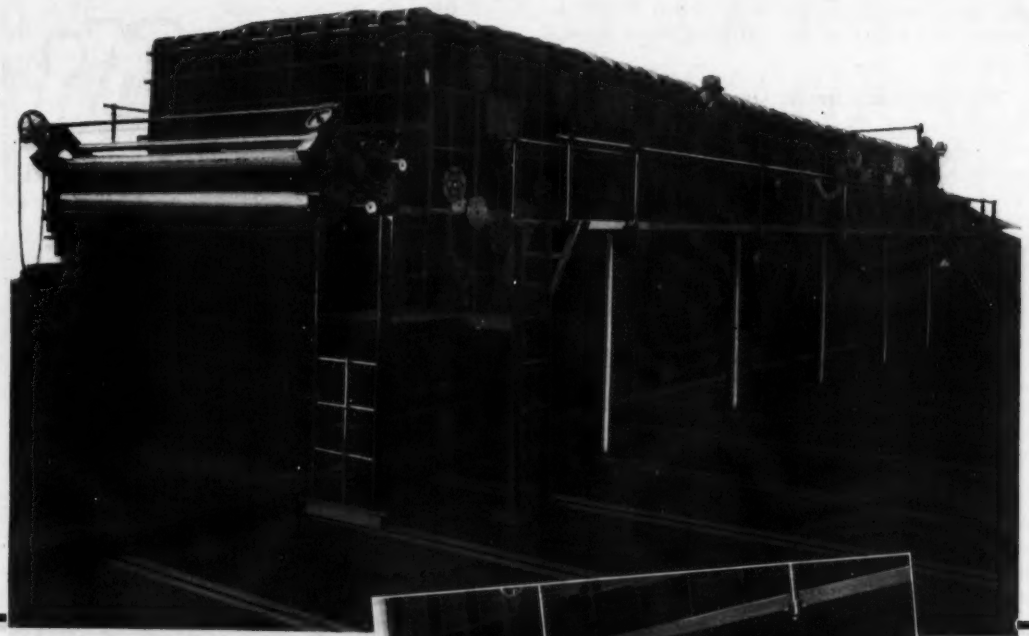
Drying the Coal

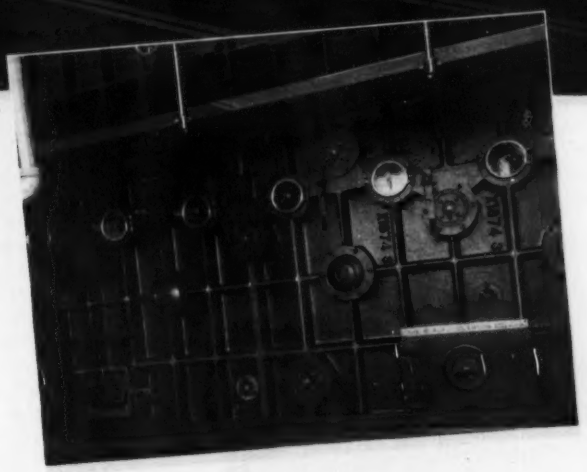
The drying proposition is one regarding which almost any kind of experience can be cited, based upon results secured even in the best of pulverized coal burning systems. In a number of instances, for example, unsatisfactory operation with steam driers has been reported. In others, changes from both waste heat and steam dryers to mill drying has effected some improvement. In still others, the use of flue heat has been found efficacious.

In one prominent power plant, dryers are only employed when the coal supplied to the mills runs 7 to 10 per cent. moisture. In another the use of air preheated to 200 to 250 degrees effects a reduction in moisture content to 3 or 5 per cent.

Experience with steam heated grids through which the pulverized coal passes is even more baffling. In one case, difficulty is encountered in keeping the coal moving through the dryer, but when this is effected about 1½ per cent moisture is removed. In another, no difficulty is experienced in keeping the coal moving and the moisture removed runs between 2½ and 3 per cent. In a third plant, no moisture to speak of was removed by such type of drier and resort was made to rotary steam and waste heat driers with little better results. Finally, so-called mill drying with preheated air and about 1½ per cent of the fuel was saved.

Indirect fired rotary driers have proved effective in some instances, the best results being secured when only a small quantity of high temperature air enters the drier, large quantities of cooler air proving less effective. About 2,500 Btu. are required with such heaters to remove a pound of moisture. Stack gases have in some cases also proved economical and effective for coal drying, removing as much as from 4 to 8 per cent. moisture. At a flue gas temperature of 475 degrees





General view of the "Minton" built for the Cotton Seed Oil Co., Memphis, Tenn.

Sectional Close-up. This Dryer is being used to convert cotton seed linters into rayon pulp—a very ticklish drying operation.

Have Us Build Your Minton

This company is committed to the policy of precision manufacture, be it moulds, rolls, drives, or what you will. It has outfitted its shops to that end.

Consequently, when commissioned to build the Minton dryer installed at Memphis, to convert cotton seed linters into rayon pulp, everything worked out "to a gnat's heel," as the saying goes.

When installed, The Cotton Seed Oil Co., with their new dryer, obtained the exact temperature required to make the enterprise a grand success. The pulp was dried uniformly clear thru.

We have the facilities for just such exacting jobs as Minton Dryers. We would like to build your Minton—when may we consult with you on this subject?

The Black-Clawson Co., Hamilton, Ohio

Owners of Shartle Bros. Machine Co., Middletown, Ohio
Export Office, 15 Park Row, New York City

BLACK—CLAWSON

and a gas exit temperature from the dryer of 100 to 125 degrees, such drying of a pound of coal requiring about a pound and a half of stack gas.

Air Control and Burner Operation

The air supply required for satisfactory combustion of the fuel is also a highly variable quantity, but is, nevertheless, of great importance. Here, however, the character of the resulting flue gases serves as an excellent guide. A insufficiency of air is indicated, not only by high carbon monoxide content, but by the presence of dark smoke. Also, the stack dust carries more combustible matter when the carbon dioxide is high, due to an inefficiency of air, the latter condition being aggravated when the fuel has not been sufficiently pulverized.

So far as the amount of excess air supplied is concerned, practice even among plants having a good deal of experience with burning pulverized coal differ widely. An excess of air over the theoretical requirement for complete combustion always has to be provided, it is true, but while in many plants the procedure is to keep the excess virtually constant, irrespective of the boiler load, or rating, in just about as many the practice is to vary the amount of excess air with the rating at which the boiler is driven. As a rule, the excess air is provided somewhat more lavishly as the boiler load increases, but occasionally the reverse is true.

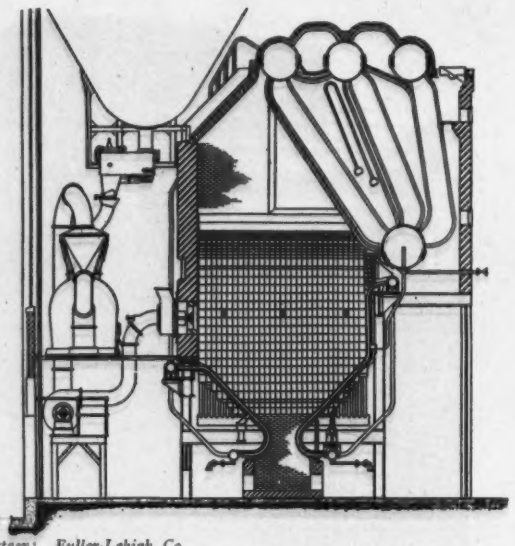
At one establishment, about 20 per cent. excess air is provided at a boiler rating of 100 per cent. and nearly 60 per cent. excess at a boiler load of 300 per cent. In another plant, while the average excess air is held around 25 per cent., the supply is cut down to 20 per cent, at high ratings and elevated to 30 per cent, at low steaming rates. In a third, the practice is a 25 per cent, excess at normal rating and a greater excess at higher ratings.

In many other installations, the percentage of carbon dioxide in the flue gases is the determining factor, the percentage sometimes being held constant and at others cut down for increases in boiler load. Where efforts are made to maintain a constant carbon dioxide content, values of 13½, 14, 14½ and occasionally as high as 15 per cent, are ordinarily striven for, whichever proves the most satisfactory for efficient combustion in the individual instance, governed in part by the quality of the coal and the characteristics of the furnace, etc.

Courtesy: Combustion Engineering Corp.

FIG. 4

Modern water-cooled furnace at the Champion Fibre Co. plant at Canton, N. C.



Courtesy: Fuller-Lehigh Co.

FIG. 5

Boiler and pulverized coal burning system which doubled boiler capacity at the Hinde & Dauch Paper Co. plant at Fort Madison, Ia.

The excess air and the carbon dioxide content of the flue gases are related in a way in many establishment both measures serve as indices in the regulation of boiler operation. One plant finds 15 per cent. carbon dioxide with 20 per cent. excess air gives the best results with slack coals and petroleum coke. Elsewhere, 14½ carbon dioxide with a 24 per cent. excess air supply is found advantageous when burning coal and 14 per cent. carbon dioxide with 30 per cent. excess air when burning petroleum coke. One of the most expertly operated plants strives for 15 per cent, carbon dioxide content with 23 per cent. excess air at low firing rates and 14 per cent, carbon dioxide with 30 per cent. excess air at maximum rating. At another establishment, efforts are made to hold the carbon dioxide content constant at about 14 per cent. and the excess air supply is varied to the load, 20 per cent. at low loads and 35 per cent. at high firing rates. Still another scheme which appears to operate satisfactorily in another plant is to vary the air supply with the load so as to hold the carbon dioxide content between 8 and 13 per cent.

The apparent vagaries in operation, in coal drying practices and requirements and in other processes entailed in the efficient burning of coal in pulverized form are susceptible, however, of being effectively coordinated in individual installations and to meet diverse existing conditions. They have been presented in this somewhat disconcerting way primarily to emphasize the need of comprehensive investigations into ways and means of capitalizing to the utmost upon the advance made to date in pulverized coal firing. As yet, experience with even the best of pulverized coal burning systems has hardly been extensive enough for the propounding of generalities of any great value.

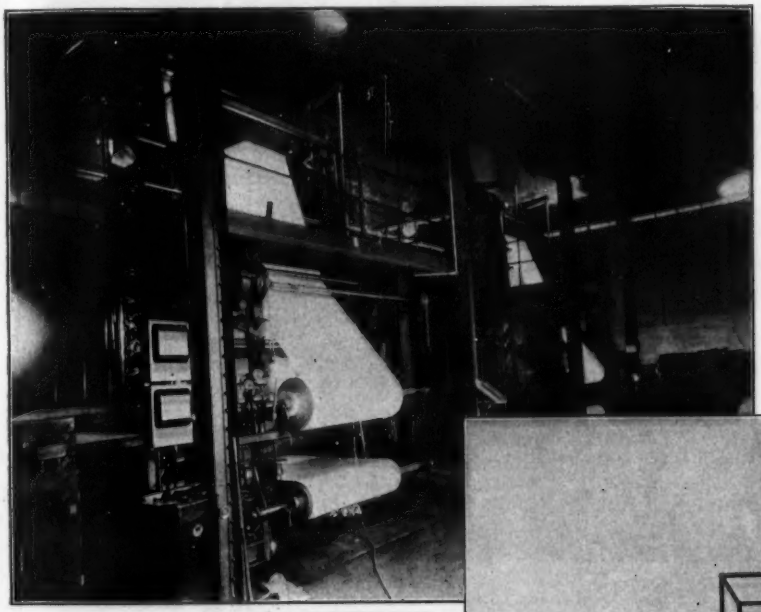
The question of burners, even, cannot be discussed with any great amount of assurance, for while certain necessary characteristics are pretty well understood, results in practice have not infrequently differed considerably from expectations. The burner characteristic and location which best promotes thorough fuel and air mixture by turbulence, or agitation of the fuel and air within and without the burner, is, of course, essential, but whether the burners should be mounted so they are horizontal, vertical or inclined is not so certain. It is in

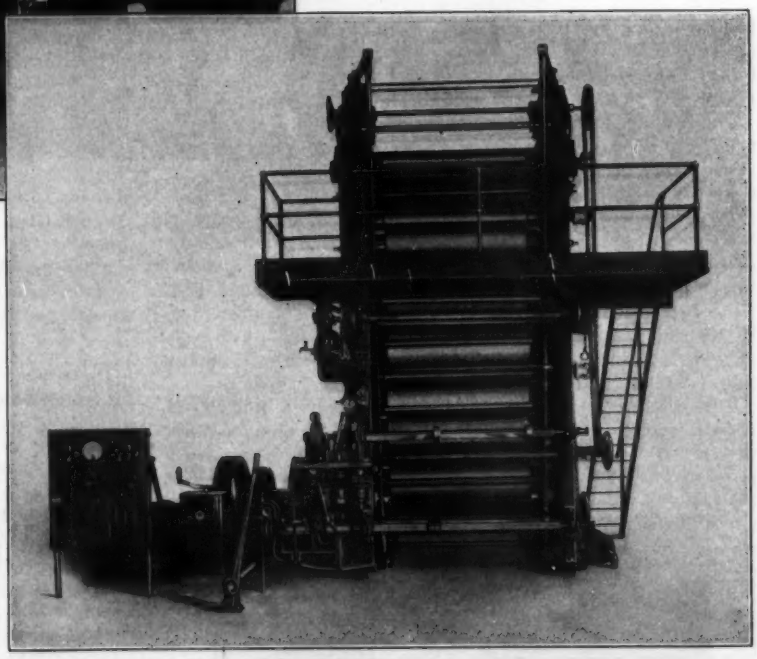
IT TAKES NO CHARTS, GRAPHS or SOOTHSAYERS to realize this about 1931!!

1930 is almost over. The statisticians and experts are turning in their business forecasts for the coming year. When these are all in and have been averaged, discounted, studied and analyzed, you'll know—what you know now—that 1931 will be a year of stiff competition, and profits must be fought for. It won't be a year in which any manufacturer can afford to be handicapped by out-moded, time wasting, labor wasting machinery. Every unit will have to produce efficiently and economically. It is a good time right now for you to check your equipment against the latest Norwood Paper Finishing Machinery to see where production can be stepped up and costs cut down. Why not have a Norwood engineer go over your plant with you? It may be that he can suggest means of gearing present equipment to modern standards. For instance, we have increased production by more than 20% in some finishing departments by changing over platers to direct motor drive.

In any case you'll want the Norwood Paper Finishing Machinery Catalog for reference. Why not send for it now?

NORWOOD ENGINEERING CO.
17 No. Maple St., Florence, Mass.





(Top left) Glassine Calenders in operation. Built for 12, 13, 14 or 16 rolls. Runs at high speed for glassine paper.

(Above) Front view of 14-roll Glassine Calender showing control panel and all control levers necessary for operation.

NORWOOD

Filters . . . Calendars . . . Platers . . . Dusters . . . Rag Thrashers . . . Folding Machines . . . Suction Boxes

some degree a question of furnace design and proportions, of boiler setting and the arrangement of heat absorbing surfaces, for while it is held in some quarters that the burners for bituminous coals should be horizontal and those for anthracite set in a more upright position, such rule does not always hold. Ordinarily, horizontal turbulent blowers appear to be the more desirable. Much the same uncertainty seems to exist in regard to the advisability of using induced or forced draft and in other questions of considerable importance from an operating standpoint, but these problems need not be enlarged upon in a general discussion of this nature.

Trends, Costs and Fly Ash Difficulties

It will be of greater general interest to point out what now appears to be the trend in the use of pulverized coal equipment and in boiler furnace protection against the high temperatures resulting from the rapid steaming demanded of modern boilers. Expenses entailed in coal preparation and certain heat losses distinctive of pulverized coal burning may also be referred to briefly to some advantage.

So far as there is a trend in the use of pulverized coal equipment, it is toward the unit system rather than toward the central, or storage, system. However, one prominent manufacturer reports having made recently about as many central system installations in pulp and paper mills as of the unit system type. A significant fact in regard to these installations is that without exception the central systems have been installed to serve boilers with less heating surface than the boilers for which the unit systems were provided. Until about five years ago, the unit system was used only on relatively small boilers, being considered less suitable for large boilers than the central system.

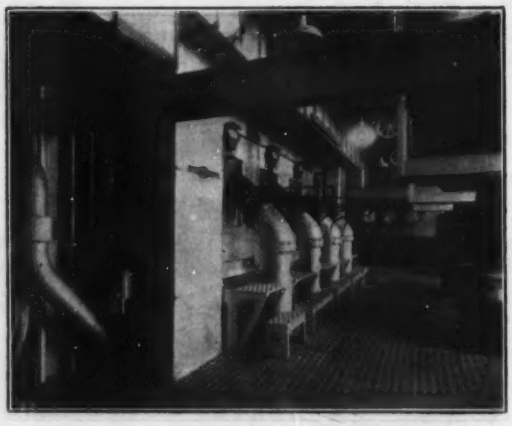
The use of water wall protection is now very general. In fact, in most cases of remodelling an existing furnace for pulverized coal firing the installation of water walls has constituted the chief modification to the boiler furnace. The necessity for this would appear to be due in part to the burning of the fuel in too coarse a form, resulting in delayed completion of combustion and an unnecessarily long flame. The fineness of the coal customarily used is, on the general average, about 60 to 70 per cent. through a 200 mesh screen, as against 85 to 95 per cent. through such screen and from 60 to 75 per cent. through a 300 mesh screen, a recommended fineness which has been found to be entirely feasible in commercial practice.

The cost of coal preparation is today only a fraction of what it was only a few years ago. Where 50 cents to $1.00 was a very fair value, at present the average experienced plant escapes with a burden of 15 or 16 cents per ton with the unit system and perhaps 5 cents more with the central system, such rates covering all power and labor expenses for both operation and maintenance. This reduction means a good deal, of course, and it might prove profitable to invest some of the saving in more careful and finer coal preparation to secure a shorter flame and more rapid combustion.

Courtesy: Riley Stoker Corp.

FIG. 6

Pulverizers serving 2,750 hp. boiler at the Champion Coated Paper Co. plant at Hamilton, Ohio



Courtesy: Riley Stoker Corp.

FIG. 7

Pulverized coal burner entrance to 2,750 hp. boiler of the Champion Coated Paper Co.

The loss due to combustible in the fly ash is also pertinent to this question of coal fineness, presenting still another excellent reason for greater care in coal preparation. This loss, in even the most successful of pulverized coal burning installations, runs now from a fraction of 1 per cent to 5 per cent. Occasionally, the loss is considerably greater. In units of weight, this means from 1 to 35 or 40 per cent, of the fly ash consists of combustible. When burning anthracite, the proportion is somewhat greater, 10 to 55 or 60 per cent., and for petroleum coke up to 80 or 85 per cent. The latter is not as serious as it sounds, however, for the ash content of such fuel is only a matter of a fraction of 1 per cent.

Results Count

These brief comments simply indicate a few of the many opportunities of realizing still greater savings in pulverized coal firing and introduce questions which time and initiative on the part of progressive establishments will, unquestionably, resolve to definite practice. Great advance has been made to date and as it is the results attained in active practice which count, a few brief remarks concerning achievements with pulverized coal firing in typical pulp and paper mill plants can advisedly be made. Such citations will be offered, however, not so much as evidence of attainments of particularly high order as an expression of the opinions held by the mills in which the systems are installed.

In one typical mill in Wisconsin, pulverized coal firing was substituted for manual grate firing three or four years ago, as has been the case in many other instances and as will be done more and more in the future, and the results secured, consequently, should be of widespread interest. No real basis of comparison is afforded, of course, for the operation of an old plant operated in an obsolete manner provides no measure by which to gauge the economy of modern operation of a different character. Nevertheless, the following comments by one of the mill's officials are of interest.

"We are certainly well pleased with it (referring to the pulverized coal burning system installed), for in our plant, instead of having two men, as we formerly did before we installed the pulverizer, we now have but one who handles this nicely, for about all he has to do is watch it; for the coal is elevated to the hopper and fed automatically.

"A TON OF FAIR PROMISES NEVER DYED a POUND of PAPER"

"Now a word about dyes," said the Chief to his new superintendent. "There'll be a lot of bright young fellows coming in to see you with great schemes for saving us money on dyes that are 'just as good.' Look out for them. Remember that a ton of fair promises never dyed a pound of paper — and that bad dyes have ruined millions. My own rule has alway s been—"Stick to known sources. Don't gamble with unknown dyes! That's why we use National Dyes almost exclusively."

NATIONAL DYES

National Aniline & Chemical Co., Inc., 40 Rector St., New York, N. Y.

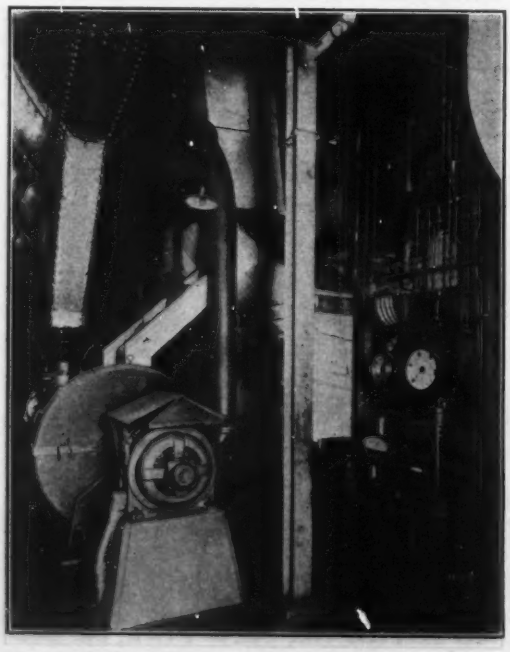
Chicago Charlotte Boston Philadelphia San Francisco Providence Toronto

"Our pulverizer, therefore, has not only saved us considerable labor, but also in fuel consumption, for it has reduced our coal cost considerably. Its other advantages are that we only have to clean the fires once a day and do not have to clean the boiler only about once in four or six weeks. Besides, the pulverizer gives us more uniform heat over the old method of hand firing, for we can control it better, so that we are not having more heat than we need one minute and too little the next."

Of course, the reduction in labor which is apparently the chief gain can hardly be attributed entirely to the system of fuel consumption, for the coal could be elevated and fed to the furnace by gravity as well by a system of stoker firing, cutting out one man as in the pulverized fuel system installed. As for the ease of heat control, this also could be effected about as well with a modern stoker installation and, so far as economy in fuel consumption is concerned, the puliverized coal system and that of modern stoking would be very much on a par. Nevertheless, the pulverized coal system of firing is vastly superior to the old displaced method of hand firing and the installation is, quite evidently, giving good satisfaction.

Another very pertinent installation is that at the Fort Madison, Ia., plant of the Hinde & Dauch Paper Company, in that the capacity of the boiler served by the new pulverized coal burning equipment has been doubled. To credit this betterment entirely to burning pulverized coal with modern equipment is, perhaps, not exactly fair, for had not the particular boiler been furnished with efficient and comprehensive water walls the intense heat developed in the remodelled boiler furnace by the pulverized coal burners would not have been feasible. However, the paper mill was confronted with the problem of increasing its boiler capacity without adding another boiler and this was accomplished.

The existing boilers were stoker fired and operated at 150 per cent. of rating, beyond which it was felt it would not be safe to drive the boilers, on account of the high furnace maintenance and excessive boiler outage which would probably result. One of the boilers, consequently, was provided with a water-cooled furnace and its stoker replaced by modern pulverized coal burning equipment. With this changeover, the boiler has been operating satisfactorily at 300 per cent, rating, delivering twice the quantity of steam it did when it was stoker fired.



Courtesy: Riley Stoker Corp.

FIG. 8

Instrument board and pulverizers at the plant of the Fitchburg Paper Co., Fitchburg, Mass.

Courtesy: Riley Stoker Corp.

FIG. 9

Air control equipment of the Champion Coated Paper Co. installation at Hamilton, Ohio

There have been many other installations, or remodelings of installations, of this character, greatly increasing boiler capacity by changing firing methods. At the same time, there have been many remodelings of stoker installations without changing firing methods which have likewise proved economical and highly efficient. Water walls have played their part in these also, so little has as yet been ascertained concerning the respective merits of the two ways of modernizing a boiler installation.

High Efficiencies Realized

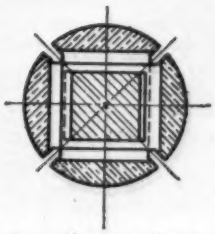
Anything like doubling the capacity of a boiler by any means whatever indicates very conclusively, however, the attainment of excellent boiler plant efficiencies and in this respect some of the results secured at mills which have been operating on pulverized coal firing are most illuminating. As will be noted, the results show very uniform, high degree of attainments and if these are not quite as high as the efficiencies attained in some of the best stoker fired plants, they are nevertheless indicative of marked improvements upon the achievements antidating the introduction of pulverized coal firing, when any efficiency better than 70 or 75 per cent, was really exceptional.

At the Nekoosa Edwards Paper Company at Port Edwards, Wis., for example, a 911-horsepower boiler is normally operated at 200 per cent. of rating and at periods up to 350 per cent of rating on pulverized coal firing. Test efficiency under such heavy demand is a matter of 85 per cent, and the monthly overall efficiency reaches 83 per cent.

The installation at the Champion Coated Paper Company plant at Hamilton, Ohio, is an outstanding one, not only among paper mill plants, but among industrial plants in general. Prior to the remodeling of the boiler plant and the introduction of pulverized fuel firing, the steam demands of the mill with its eleven paper machines were supplied by a multiplicity of low pressure boilers. The modernizing program followed embraced the substitution of one large, 2,719-horsepower, boiler with water-cooled furnace walls, designed for operation at 650-pound steam pressure, for the numerous smaller boilers. This large boiler is fired on pulverized coal, normally at 300 per cent of rating and sometimes at 400 per cent rating, generating steam at a total temperature of close to 750 degrees Fahrenheit. The monthly overall efficiency attained is the truly noteworthy one of 86 per cent.

THEY CAN'T HELP COLLAPSING

CONSTRUCTION of M & W Brass Collapsible Shafts is such that they can't help expanding easily and collapsing freely. The four brass segment bars have lugs beveled at just the right angle to slip free from each other easily, when the big end nut is run back to collapse the shaft after the roll is wound. No coaxing is needed: the shaft simply drops loose as soon as the end pressure on the brass bars, due to the nut, is released.



Cross Section of Shaft

In the second illustration one brass bar is shown separately: the other three bars and the square centre shaft are in place. Tightening the end nut causes the beveled brass lugs to work against each other, expanding the shaft.

Picture what this simple, trouble-proof device can do to expedite your plugged-roll winding.

Then send a trial order for one shaft, stating width and size of rolls intended.

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M&W BRASS COLLAPSIBLE DRUM WINDER SHAFTS

At the Fitchburg Paper company, West Fitchburg, Mass., a test efficiency or normal load, which is about 175 per cent of boiler rating, an efficiency of like value, 86 per cent, is secured. Here peak demands occasionally step the steaming up to 225 per cent of boiler rating, yet the monthly overall efficiency of the plant reaches the high mark of 85 per cent.

An interesting item of expense from the Wausau Paper Company, Brokaw, Wis., is that the average maintenance cost of two unit pulverizers serving a couple of 512-horsepower boilers, put into operation in 1928, has not exceeded 5 cents per ton of coal handled. This is significant in that it agrees closely with the present cost of coal preparation as previously mentioned, since the item of maintenance expenses usually represents about a third of the total cost of coal preparation. Incidentally, the manufacturer of the pulverizers guaranteed at the time they were installed that the maintenance cost would be from 4 to 7 cents per ton, which is also of interest as it shows that the purchase of coal pulverizing equipment can now be consummated with reasonable assurance that good value will be received for the outlay entailed.

From the foregoing, it is very apparent that great advance in burning pulverized coal has been made and that the modern boiler plant fired on powdered coal is far more efficient and economically operated than even the best of the plants of a decade or two ago. This development has thrown much light upon combustion requirements in the power plant and most of the recent progress in boiler operation is unquestionably traceable to developments instigated by the demands originating from powdered coal fired boilers.

Other systems of fuel combustion may be just as economical and just as efficient, but the system of burning pulverized coal holds forth the possibilities of effecting still greater economies than have as yet been realized. No mill contemplating improvements in its boiler plant, certainly, can afford to overlook these opportunities nor fail to give careful consideration to the adoption of some modern system of pulverized coal burning. Investigations may show that under the conditions which may exist some other system of coal burning offers greater advantages, but it is very certain that whatever system is installed it will include many refinements for which the advance in pulverized coal firing is in large measure responsible.

Wants River Purity Maintained

[FROM OUR REGULAR CORRESPONDENT]

SALEM, Ore., December 6, 1930.—Governor Norblad sent a letter to the war department at Washington on November 24 protesting against the issuance of a permit that would allow the Weyerhauser Timber Company to deposit refuse from its proposed sulphite mill at Longview, Wash., on the Columbia River. The governor's letter was inspired, it is said, by the complaint of fishermen on the lower Columbia who declared that such dumping would menace one of the state's greatest industries, commercial fishing.

Governor Norblad stated specifically that he had no desire to interfere with the construction of the proposed pulp mill, but he suggested that the refuse be treated in some way so that its danger to fishing activities might be eliminated.

Tapajna Gary Paper Co. Formed

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 10, 1930.—Articles of incorporation have been filed with the Secretary of State here by the Tapajna Gary Paper Company, Inc., having a principal place of business in Gary, Ind. The corporation has an initial capital stock of 100 shares having a declared par value of $100 each and is formed to deal in common paper, particularly in grocers' supplies. The first board of directors is composed of Joseph Tapajna, John Tapajna, Gizella Tapajna and Anna Tapajna.

New York Trade Jottings

Westbrook Paper Company, New York, has been incorporated under the laws of New York State with a capital stock of $20,000.

* * *

George Carruthers, president of the Interlake Tissue Mills, Ltd., Merritton, Ontario, was a prominent New York visitor last week.

* * *

The Colonial Paper Company, Brooklyn, N. Y., has been chartered under the laws of the State of New York, with a capital stock of $25,000.

* * *

E. C. Ringland, of the U. S. Forest Service, Washington, D. C., was in New York last week. Mr. Ringland will sail for Europe shortly and will be permanently stationed there to represent the Forest Service of the Department of Agriculture.

* * *

The Brainard Paper Company, of 28 Beekman street, New York, have recently added the following experienced salesmen to their metropolitan forces: Richard M. Burbank, formerly with the White-Burbank Paper Company; William P. Maxwell, formerly with the Miller & Wright Paper Company, and Randolph C. Harden, formerly with the Magnolia Paper Company, of Fort Worth, Texas.

Douglas Taylor Addresses Paper Salesmen

"Are High Grade Papers Holding Their Own" was the subject ably discussed by Douglas Taylor, sales manager for *Printer's Ink*, at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held on Tuesday at George's Restaurant, 507 Lexington Avenue. The basis of his top was a questionnaire which his periodical recently sent out to more than fifty leading paper merchants throughout the country asking a group of questions in regard to book papers, cover papers and bonds.

From the questionnaires already received, some of the conclusions reached were as follows: The sale of coated papers is being well maintained in volume of business; Demand for folding enamel is increasing; No. 2 is cutting in on the higher grade coated lines; Demand for machine finish and English finish grades is expanding, while the request for super is falling off; Lower cost cover papers are gaining and higher price grades are failing to hold their own; Low price sulphite bonds are cutting in on the higher price bonds; aggressively advertised bonds are retaining their prestige.

Mr. Taylor's address was exceptionally interesting and instructive and was thoroughly enjoyed by all present. He answered many questions in an illuminating manner during the long discussion which followed his remarks.

Dispute Over Power Rights Closes Mill

PLATTSBURG, N. Y., December 8, 1930.—A dispute over power rights this week caused a complete cessation of operations at the plant of the Saranac Pulp and Paper Company and incidentally threw several hundred workers out of employment. The suspension of work resulted from a dispute that arose after the Public Service Commission had approved a franchise to the Saranac River Power Corporation to supply power to the mills. The Associated Gas and Electric Company has for some time been furnishing the local concern with power and when it learned that the contract would not be renewed served notice that the supply was to be turned off in order to remove the paper company's wires from several miles of poles owned by the former. About a week will be required to place new lines in position when the mills will return to capacity production. It is claimed that the company stands to lose about $50,000 by the decision to deprive it of operating power.

TECHNICAL BOOKS

for

The PAPER *and* PULP INDUSTRIES

CHEMISTRY *of the* SULPHITE PROCESS

by R. N. Miller and W. H. Swanson
M. W. Bray, R. Soderquist, T. M. Andrews.
W. H. Mansson

The papers which constitute this book appeared originally in the trade and technological journals as current reports of the progress of investigations under way at the United States Forest Products Laboratory for a period of about six years beginning with 1921. This information is the accumulation of years of experience. The method by which sulphite with the desired properties is to be made, the conditions under which it must be cooked, the strength of acid to be used, the equipment, operation and materials are all fully covered in this book. Included in this volume also is "Sulphite Pulp from Spruce" by Donald E. Cable.

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Books and articles are listed under the author (or title) in the dictionary arrangement, and to refer under each material, to the author, and the year of publication.
This list includes all the woods tested at the Forest Products Laboratory, as well as many tested by the Imperial Institute of Great Britain and by other workers.

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Method of procedure for adoption of official paper testing methods by the Technical Association of the Pulp and Paper Industry. The work on standardization of paper testing methods is divided as follows: Microscopic, Physical, Chemical, Optical Tests for Special Uses of Paper.

A number of new proposed methods and testing instruments are described, and much of the text has been rewritten wherever found necessary as a result of developments since the previous edition.

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VALUE OF TRADE MARKS AND SLOGANS

The Patents Committee of the Technical Association of the Pulp and Paper Industry, recently appointed, has been industrious and judging from the requests regarding its activities that are constantly being received in the office of the PAPER TRADE JOURNAL, is apparently doing a work that meets with the approval of the industry. In its latest contribution the Committee discusses the value of trade marks, slogans, etc.

As in the case of trade secrets, the value of a patent may be augmented by the adoption of distinctive trade marks, slogans, labels and containers for the product.

A trade mark may be defined as any sign, symbol, mark, word or words which distinguish one man's goods from those of another. It is applicable only to a vendible article of merchandise. In this respect it differs from a trade name which is only applied to a business as a whole. A trade mark may, however, be used as part of a trade name. In fact, it is advisable to do so, whenever possible.

A trade mark may, if it fulfills certain statutory requirements, be registered in the United States Patent Office. For example, it must have been used in interstate or foreign commerce before application is made for registration. It may also be registered in each of the states wherein it is used.

A slogan is not registrable as such but may be registered as part of a print or label. Prints and labels are artistic creations used in the sale of goods. A label must be attached to the goods or to a container, while a print cannot be attached to the goods but must be used to advertise them.

Excellent examples of slogans are "Your paper is made in your beaters" and "Paper is part of the picture."

Before adopting a trade mark a thorough investigation should be made to determine if it is in use on goods of the same descriptive qualities. The investigation should always include a search of the records of the United States Patent Office to determine whether the mark has been registered by another. It is also advisable to search through buyer's guides, trade directories, etc. Neglect to take such precautions may result in the loss of large sums of money spent in printing labels, advertising, etc.

Many unscrupulous dealers seek to avail themselves of the good will built up by their more successful competitors by imitating their trade marks, labels and containers. Proper relief may be obtained against them by means of a suit for unfair competition, whether or not Patent Office registration has been secured. It is best wherever possible to secure such registration as registration confers many important advantages. For example, registration gives notice to the world of the owner's rights and prevents subsequent registration to another. Then again, it enables suit to be brought in a Federal Court.

PAPER COATING MATERIALS STUDIED

In view of recent developments in paper-coating clays and adhesives, a study of materials for coating papers for high-grade printing has been conducted at the Bureau of Standards. Coating tests were made on the semicommercial equipment of the Bureau's paper mill, and printing tests on the resultant papers at the Government Printing Office. The purpose of the study was to effect economies and promote the use of domestic resources, which would become very important in the event of any disturbance limiting the supplies of foreign origin.

The characteristic feature of coated paper is a thin layer of mineral matter and adhesive applied to the surface of the fiber sheet to form a smoother and more even surface than that obtained by the other paper-manufacturing processes.

Four different coating clays, two foreign and two domestic, and a commercial ceramic material prepared from diatomaceous earth were the minerals employed in the tests. The domestic clays were from the same mine but had received different refining treatment—one having been washed only; the other, chemically treated and washed. Three types of high-grade adhesives were used—casein, glue, and modified or chemically treated starches.

The tests showed that the present methods of refining American clay have improved its color, fineness, and suspension quality. The American clay that had been chemically treated and washed compared favorably with the foreign clays as paper-coating minerals. The coating of diatomaceous earth compound did not adhere well to the fiber sheet.

When the experimental papers were substituted for regular stock being printed by the half-tone process, equally good printing results were obtained with the American and foreign clays and with the three different kinds of adhesives, although the starch-bound coatings may possibly have absorbed more ink.

Modified starch has a number of attractive qualities not possessed by the other adhesives. It is clean, does not have an unpleasant odor, and is comparatively cheap. The coatings for which starch was used had less water resistance than the casein-bound coatings, but since a high degree of water resistance is not required for a large majority of printing papers, such as book, magazine, and catalogue, it is believed that starch-bound coatings could be used for these very satisfactorily.

Recommends Mill for Distinctive Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930.—The United States Bureau of Efficiency in its annual report to the President last week recommends the erection of a government mill for the manufacture of distinctive paper for the printing of currency. In connection with paper the Bureau says in its report: Cooperative research was continued with the Bureau of Standards and the Bureau of Engraving and Printing on the improvement of the quality of currency paper and on those steps of the conversion process that particularly affect the service life of the paper. Assistance was rendered to the two contractors for 1930 in improving the currency paper through discussions of their problems and cooperative special tests of both unsized and finished paper. The practicability of making currency paper characterized by high and uniform fiber strength and possessing good printing qualities has been demonstrated definitely by both of the contractors during the past year.

Further paper-making studies on the use of fibrous materials other than new linen and cotton rags were continued in cooperation with the Bureau of Standards. The preliminary tests of paper made from purified wood fibers indicate that they possess stability of high degree and sufficient strength to warrant further study of their adaptability to the currency conversion process.

Studies are being made of materials and methods for increasing the resistance of printed currency to surface wear. These have included laboratory experiments.

The study to determine what can be done to improve the commercial value of paper pulp made from redeemed currency has been continued. The Bureau's last annual report indicated that a pulp of commercial value had been produced experimentally. Further tests made with the cooperation of the Bureau of Engraving and Printing have been most promising and indicate that a pulp can be produced on a commercial scale which will be of sufficient commercial value to enable industry to utilize it and at the same time bring a price which will more than offset the operating loss incident to the destruction of redeemed currency.

For many years distinctive paper for printing Government currency and securities has been procured from a private manufacturer whose plant is located at a distance remote from the Bureau of Engraving and Printing in the District of Columbia. This paper is not a commercial product and its manufacture, or the manufacture of any paper having similar distinctive features, other than for the use of the Federal Government, is forbidden by a statute which imposes heavy penalties. The development of secret processes for further protection against illegal manufacture is desirable, but can not well be accomplished as long as the Treasury Department is required annually to advertise its specifications and to rely upon a private contractor to carry on the manufacturing operations.

The Bureau has recommended the construction of a fireproof paper mill, on a suitable Government-owned site in the District of Columbia, of sufficient capacity to manufacture all distinctive paper required for the printing of United States securities. It is estimated that the construction of such a mill would reduce the annual outlay for this paper, including transportation charges to Washington, approximately $234,000. The transportation cost alone is at the rate of $55 a ton, and the annual requirements are about 1,000 tons. A bill to accomplish this purpose was introduced at the last session of the Congress and is now pending before that body.

Logging Operations Await Cold Weather

[FROM OUR REGULAR CORRESPONDENT]

LYONS FALLS, N. Y., December 8, 1930.—Lumbermen in this section are now awaiting a good spell of freezing weather before hauling out the annual cut of logs to be later converted into pulpwood for paper mills. The Gould Paper Company plans to start logging operations at their camp near North Lake soon after the holidays while in the meantime the mills here are being hampered in operations because of low water in the streams which supplies the power. Officials of the company claim that low water conditions have resulted in curtailing operations to about sixty-five per cent of capacity although the thaw of the past few days improved the flow of streams and relieved conditions to some extent.

The logging operations this season at the North Lake camp will be done by about 175 lumberjacks under the supervision of John B. Todds, superintendent of the woodlands division of the company. It was learned that about 30,000 cords of spruce pulpwood have already been cut and this will be moved to the skidways early next month. Most of the hauling is now done by the use of motor tractors that have replaced former methods and all now that is required is cold weather sufficient to harden the ground in order to facilitate the work. Fourteen tractors of the caterpillar type are being used this year at the camp and each will haul several sleighs piled high with pulp wood to their destination on the skidways to be later floated downstream to the mills on the Moose River in this village after the spring freshet.

It was also announced that with satisfactory weather conditions the logging will be completed in about two months but in case of mild weather with difficulty in hauling the project will be greatly prolonged. In addition to using tractors a number of teams of horses will also aid in the task although they are not now regarded as a necessity. The chief obstacles to be combatted by the woodsmen are thaws and rains with lack of freezing which might result in great difficulty in having the timber at the skidways on scheduled time.

Adopts Retirement Program

R. P. Andrews, president of the R. P. Andrews Paper Company, of Washington, D. C., has announced the adoption of a cooperative retirement program as another step towards the completion of the company's industrial relations program. This step, being taken during the present period of general depression indicates the company's desire to give assurance to its employees, and the unanimous acceptance of the plan by all eligible employees shows their appreciation.

Approximately $100,000 of group life insurance is now in force on these employees, and with the addition of insured annuities, they are now protected against the hazards of dependent old age as well as of death.

All employees actively at work on December 31, 1930, the date the plan becomes effective, will be eligible to participate in annuity benefits. Like the original, the additional coverage is being underwritten by the Metropolitan Life Insurance Company and features the cooperative method of paying premiums, whereby employer and employees jointly share the cost.

The amount of the pension to be paid will be determined by an employee's earnings and will become payable at age 65. The amount will be equivalent to approximately 1½ per cent of future earnings. While the normal retirement age has been fixed at 65, an employee can retire at an earlier or later age with a corresponding decease or increase of the annuity.

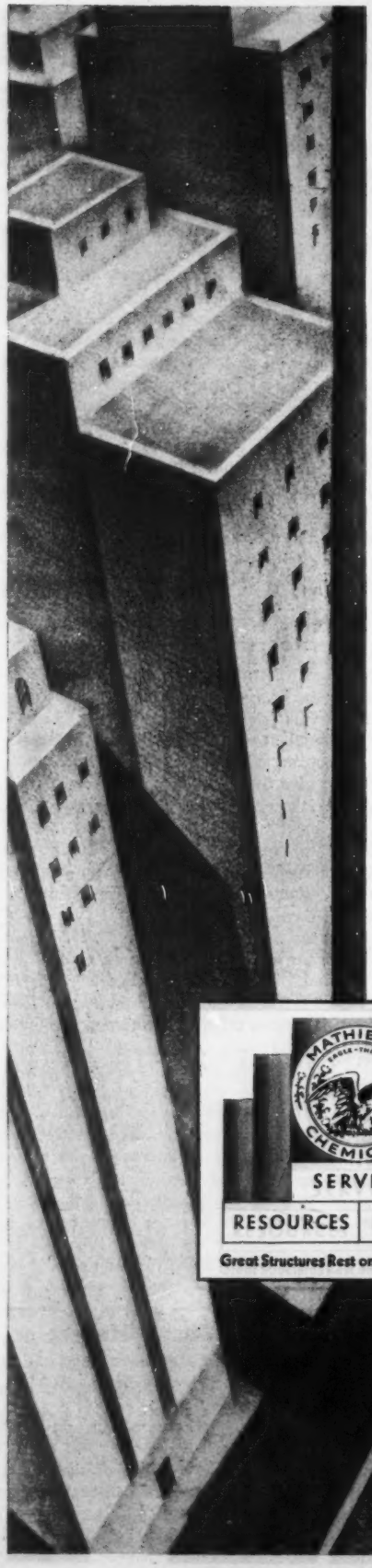
Other features of the general plan include the advantages of a staff of visiting nurses, whose services are supplemented by a health advisory bureau. Included in the latter's functions is the regular distribution of pamphlets on disease prevention and health conservation.

Technical Association Annual Meeting

The annual meeting of the Technical Association of the Pulp and Paper Industry will be held February 16-19, 1931 at the Pennsylvania Hotel, New York, N. Y.

All members wishing to present papers should inform the Secretary, R. G. Macdonald, immediately.

Manuscripts of papers must be in the hands of the Secretary prior to January 10. Abstracts of papers must be sent to the Association before January 1.



A Structure can be no stronger than its FOUNDATIONS

By CARL R. MILLER

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Great Structures Rest on Strong Foundations

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Deterioration of the Herzberg Stain*

By F. L. Minnear[1] and James R. Withrow[2]

Abstract

SCOPE OF INVESTIGATION: Not infrequently in legal cases, the determination of fiber content in a paper stock gives widely divergent results in the hands of experts even on the same side of the case. One can hardly blame attorneys for preferring results favorable to their side. However, this is not good and is certainly not a safe procedure, although it may occasionally win a case. In the long run erratic or undependable results will be disastrous in the face of contending experts. Any method, therefore, which is capable of such divergence in the hands of experts demands careful study. In this work for various reasons we studied the Herzberg stain to find sources of unexpected error, due to deterioration of the reagent itself.

Results of the Work

The results of this work indicate:

1.—Contrary to statements in the literature that the Herzberg stain deteriorates so rapidly that it must be made fresh every two weeks, this investigation shows that, if properly started, the "life" of this stain is more than 12 months.

2.—Much larger batches than those proposed in the literature may be made and preserved with good results, drawing from the stock solution small portions sufficient for one or two hundred determinations, however, in case the stain is to be used frequently, as in routine analytical work.

3.—Ordinarily, however, the slides prepared for microscopic identification of fibers, using the Herzberg stain, do not preserve well even when kept in the dark.

4.—Paraffining the edges of slides, and keeping them in a black box, was found to preserve them (for indentifying rag, sulphite and soda fibers) for about two months, at which time, some bleaching of the colored fibers was noticed, especially in the case of rag.

5.—Rag, bleached sulphite and bleached soda fibers, when stained with Herzberg stain, became noticeably deeper in shade upon standing in the dark,—reaching a maximum depth of shade in 24 hours, but bleaching out, of course, within a few hours in daylight.

6.—Titration for the free iodine content in the Herzberg stain with 0.001 normal sodium thiosulphate appears to be a more sensitive test for incipient deterioration than the examination of stained fibers.

Introduction

The Herzberg stain is widely used in the paper industry as an aid in identifying certain fibers. Most paper today is made from an intimate mixture of two or more kinds of fiber pulp. The value of a selective stain, such as that of Herzberg is evident. It can be used to give characteristic colors to certain fibers so that they may be indentified qualitatively.

Naturally, the literature would have much to say regarding a material so important as the Herzberg stain. Some valuable contributions have been made in an effort to standardize the method of its preparation and use. This investigation enlarges some of the work previously done, and corrects some of the current impressions regarding instability of the stain. The object was to eliminate uncertainty in use and to make this stain even more useful if possible.

In the course of our investigation of the fiber content of certain stock papers, it became desirable, for comparative purposes, to use the same stain over an extended period. Also, for the same reason, it was necessary that slides be preserved longer than one week.

Stains depending upon free iodine for one of the ingredients are subject to deterioration due to loss of the element iodine either by evaporation or chemical change. It seems that sunlight hastens the bleaching action.

For differentiating rag, sulphite, soda and ground-wood fibers, it is generally agreed that the Herzberg stain is as good as, if not better than other stains on these fibers. Several articles in the literature definitely state that for the good results, the Herzberg stain should be used while fresh, and that it "should not be used longer than two weeks." In any potentially legal work, this possibility of error due to use of solutions older than two weeks must obviously be settled.

Literature

To aid in the differentiation of fibers, Herzberg[3] recommends his zinc chloride-iodine-potassium iodide solution.

Merritt,[4] of the Bureau of Standards, in an effort to standardize the Herzberg stain formula, sent a questionnaire to several paper manufacturers who used this stain. Four of the questions which were asked, together with a summary of the answers that were received, are quoted below.[5]

MERRITT'S STANDARD HERZBERG STAIN FORMULA: After making up a series of stains according to different procedures, yet based

* Contribution from the Chemical Engineering Department of The Ohio State University.
[1] University Fellow, Dept. of Chemical Engineering, Ohio State University.
[2] Professor of Chemical Engineering, Ohio State University, Columbus, Ohio.

[3] W. Herzberg, "Papierprüfung," 6th Ed. (1927), pub. by Julius Springer, Berlin; page 87.
[4] Muriel F. Merritt, "Improvements in Methods of Making the Herzberg Stain Used in Fiber Analysis." Paper Trade J., Vol. 75, No. 8 (Aug. 24, 1922), page 43.
[5] "What formula do you find most satisfactory for the stain known as the Herzberg stain? The formulas varied but the majority used Herzberg's original formula.
"Is the stain made in large or small quantities? It is made in small quantities.
"In what type of containers is the stain kept? In dark bottles by all who replied.
"How long will the Herzberg stain keep and still give good color reaction? From two weeks to two years."

upon Herzberg's formula, Merritt[6] proposed a standard procedure of preparation as given below.[6]

About two years later, Merritt[7] gives the same standard formula for the Herzberg stain, as quoted, except for two items. For solution A, after adjusting to 1.8 specific gravity, is substituted: "Pour 40 cc. of the solution into a tall cylinder." And in the following paragraph: "Where color differentiations are important, *the stain should not be used longer than two weeks.*"

Referring to the two articles by Merritt on the improved Herzberg stain formula, Schorger[8] repeats almost verbatim the method given in the Bureau of Standards Technical Paper No. 250, including: "Where color differentiations are important, the stain should not be used longer than 2 weeks."

Griffin[9] refers to Merritt's article in the PAPER TRADE JOURNAL.[4] He copies Merritt's proposed formula for the Herzberg stain, including: "The following day pipette off the clear portion into a black bottle, leaving 3-4 cc. of the solution above the sediment. The stain will be found to be satisfactory for at least two weeks. Weights and measures must be observed carefully."

In the text-book[10] prepared under the direction of the Joint Executive Committee on Vocational Education representing the Pulp and Paper Industry of the United States and Canada, it states:

"The stain that is most widely known and used is Herzberg's stain; it consists of two solutions.....

"When this stain is used for analyses where color differences are important, it will be found satisfactory for at least two weeks, *after which time, a new preparation should be made.*"

DISCUSSION: Thus, by referring to the literature one might easily get the notion that the Herzberg stain is a very unstable solution. If a particular stain is worthless after a few weeks or so, many would-be users may rightfully turn to a substitute that promises to be more stable, particularly if their need of it is only occasional. The avoidance of the use of so valuable a stain as the Herzberg stain for such a reason is unfortunate. Therefore an investigation was made to determine its "life" under various conditions and to account for some of the causes of the rapid deteriorations that have been reported and particularly to determine if false results would be secured by use of an "old" sample of stain.

Experimental

SOLUTIONS: Several different batches of the Herzberg stain were made according to the formula proposed by Merritt in the PAPER TRADE JOURNAL.[4] All specific gravity measurements, of "Solution A" and the final mixture of the solutions, were made by means of a pycnometer with attached thermometer. (These are "apparent" specific gravity measurements, water=1.000). With the exception of Batch No. 1, all batches of stain were preserved in closely fitting, ground-glass stoppered bottles of 120-cc. capacity, which were completely covered (up to the neck) with two layers of black glazed paper. When not in use, all bottles were kept in the dark. Batch No. 1 was kept in a 120-cc. dark-amber colored bottle with cork stopper.

FIBER STOCK: Standard half-stock fibers of rag (seconds and blues), bleached sulphite pulp and bleached soda pulp were obtained from the Bureau of Standards (Washington, D. C.). A mixture of one-third of each, by weight on air-dry basis, was made by thoroughly shaking in a test tube of distilled water. This same standard mixture, kept in the corked test tube and placed in the dark when not in use, was used for all tests to compare the staining properties of the different batches of Herzberg stain over the period of fourteen months.[11]

SLIDES: Slides for miscroscopic examination were made as follows: two thin clean dry microscope slides were used, one serving as the cover glass. The test tube of standard mixture of fibers was shaken to obtain a uniform suspension of the fibers, and with the point of a needle three small portions of fibers were taken. These were placed together on one of the glass slides and pressed twice with hard filter paper to blot off all excess water. Two drops of stain were placed on the fibers. By using two needles, the fibers were then teased apart so that no clumps were present. The other slide was dropped over the preparation, and a count of the differently colored fibers was made with the aid of the microscope.

As indicated in the data, some of the slides were sealed around the edges. This was accomplished by touching each of the four edges of the prepared slide to the surface of melted paraffin wax. The paraffin must not be too hot else it will run over the surface of the slide. Those slides that were intended to be saved were kept in a black box, which was set aside in the dark.

COUNT: Using a microscope of 100-diameters magnification, the differently colored fibers were counted in ten different locations or "fields" in each slide, and the ratio of the rag, sulphite and soda fibers calculated for the slide. The slides were examined several times:

a—immediately after being made.

b—the following day after being made (since the fibers stained deeper color after standing 24 hours, this examination was used as the basis of comparison of a slide with previously made slides whenever possible).

c—periodically thereafter.

A sample calculation of the microscopic analyses of slides is here given, using a slide made from Batch No. 5-C of Herzberg stain:

Field number	Rag	Bleached sulphite	Bleached soda
1	13	6	9
2	6	4	6
3	6	7	6
4	12	14	11
5	5	6	8
6	7	11	8
7	6	7	5
8	7	7	7
9	9	11	8
10	4	4	6
	75 +	77 +	74 = 226 total

75/226 = 33.1 per cent rag
77/226 = 34.1 per cent bleached sulphite
74/226 = 32.7 per cent bleached soda

Effort was not made to make the count highly accurate, although two or more very short fibers were called a unit. The results were within 5 per cent of the true value.

Data

The colors of the fibers stained with the Herzberg stain were:

a—Rag; brownish red to reddish brown, uniformly colored throughout the length of the fiber.

b—Bleached sulphite; sky blue of medium to light depth of shade. Numerous pits showed throughout the length of the fiber.

c—Bleached soda; blue of a deep, slightly muddy shade, uniformly colored throughout the length of the fiber.

Upon standing 24 hours, while protected from the bleaching effect of light, the shade of color of the stained rag, sulphite and soda fibers was noticeably darker. Longer standing caused little or no further darkening effect.

[6] "The following formula and procedure are, therefore, adopted as standard:
"Solution A: 50 g. of dry zinc chloride (fused sticks), 25 cc. distilled water added with a 25 cc. pipette in the zinc chloride bottle, stoppered and shaken. Should be about 40 cc. of solution.
"Take the specific gravity at 28 deg. C. If the specific gravity is not 1.8 add distilled water in 1 cc. pipette until the specific gravity is 1.8, then pour into a tall cylinder.
"Solution B: Take part of 12.5 cc. of the distilled water to rinse the thermometer, the hydrometer and original zinc chloride container and add to solution A. Dissolve 5.25 g. of potassium iodide and 0.25 g. of iodine in the balance of the water. Add B to A, stir well and place in the dark. The following day pipette off the clear portion into a black bottle, leaving 3 or 4 cc. of the solution above the sediment. Add a leaf of crystal iodine.
"This stain will be found to be satisfactory for at least two weeks if it is to be used for routine analysis where color differentiations are important. Weights and measures must be observed carefully as Herzberg advised in his directions."

[7] Muriel F. Merritt, "Pulp and Paper Fiber Composition Standards," Bureau of Standards, Tech. Paper No. 250 (1924).

[8] A. W. Schorger, "The Chemistry of Cellulose Wood," 1st ed., 1926, pub. by McGraw Hill Book Co., page 554.

[9] R. C. Griffin, "Technical Methods of Analysis," 2nd ed., 1927, pub. by McGraw-Hill Book Co., page 447.

[10] "The Manufacture of Pulp and Paper," Vol. V, Sec. 5, 1st ed., 1925, pub. by McGraw-Hill Book Co., page 50. (Prepared under the direction of the Joint Executive Committee on Vocational Education representing the Pulp and Paper Industry of the United States and Canada.)

[11] For method of preparation of fibers from a sheet of paper (for staining tests) which is sized or contains fillers, see: Griffin, "Technical Methods of Analysis," 2nd ed., 1927, pub. by McGraw-Hill Book Co., page 445.

In the examination of slides several weeks old, it was noted that the rag fibers did not preserve their color quite as well as the sulphite and soda fibers. The rag fibers "bleached out" sooner.

SPECIFIC GRAVITY OF HERZBERG STAINS: The specific gravity of the final mixture of each of the different batches of Herzberg stain measured:

Batch number	Specific gravity (water = 1.000)	Temperature deg. C.
1	1.685	29.2
2	1.690	28.0
3-A	1.764	28.0
3-B	1.694	27.6
3-C	1.670	28.0
4	1.685	30.0
5-A, -B, -C, and -D	1.695	29.8

Batch No. 3-A was made up with a deficient amount of water. It stained the fibers a decidedly deeper shade than the diluted portions. In preparing 3-B, 4 cc. of distilled water were added to 35 cc. of 3-A. In preparing 3-C, 1 cc. of distilled water was added to 25 cc. of 3-B.

Deterioration of Herzberg Stain Due to Age

About 55-cc. quantities of the Herzberg stain (Batches No. 1, 2, 3-A and 4) were made and preserved for a period of about twelve months. Within a few days after making up Batch No. 3-A, it was divided into 3-A and the diluted portions 3-B and 3-C. As previously described, slides were made and analysed at different times throughout the twelve months to determine what deterioration, if any, had taken place. For data, see Tables No. 1, 2, 3 and 4.

Table No. 1

DETERIORATION OF HERZBERG STAIN KEPT IN DARK BOTTLE WITH CORK STOPPER (BATCH NO. 1)

Slide number	Age of stain (days)	Age of slide (days)	Microscopic analysis	Remarks
6	12	0	(not counted)	Fibers stained lighter shade than freshly prepared stain, however good differentiation.
9	18	0	33.0% rag balance, chemical wood	Fibers decidedly lighter shade than slide No. 6, although could still differentiate fibers.
12	25	0	.....	Fibers too weakly colored to give distinct differentiation.

Discussion of Table No. 1

It would seem obvious that storage conditions might affect the life of such a reagent as the Herzberg stain. Table No. 1 shows the rate of deterioration of this stain when kept in a dark glass bottle with *cork* stopper. The cork of the bottle containing this batch of stain (Batch No. 1) was badly blackened within a few days by the absorption of iodine. The short "life" of the Herzberg stain found by earlier workers may have been due to use of cork stoppers. However, 18-day old solution gave the correct value for rag—namely, 33 per cent.

Discussion of Tables No. 2, 3 and 4

Tables No. 2, 3 and 4 (Batches No. 2, 3-A-B-C and 4 respectively) show the rate of deterioration of different batches of the Herzberg stain when kept in darkened, glass bottles with *ground-glass stoppers.* The affect of age of the individual slides is also shown in the first two of these tables. In case the slide was paraffined along the edges, it is so indicated.

Table No. 2

PRESERVATION OF HERZBERG STAIN IN DARK BOTTLE WITH GROUND-GLASS STOPPER (BATCH NO. 2)

Slide number	Age of stain (days)	Age of slide (days)	Microscopic analysis	Remarks
2	0	0	33.6% rag	Distinct differentiation.
		2	29.1 rag	Distinct differentiation.
		9	28.5 rag	Fair differentiation.
4	2	0	34.2 rag	Distinct differentiation.
		7	35.1 rag	Distinct differentiation.
		34	.....	Bleached colorless.
11	16	0	33.7 rag	Distinct differentiation.
		11	35.8 rag	About one-fourth of this slide was bleached out.
19	41	0	(not counted)	(Paraffined slide.) Distinct differentiation, no deterioration of stain.
		21	(not counted)	Distinct differentiation, no deterioration of slide.
		74	(not counted)	All fibers bleached to lighter shade, but could differentiate.
..	382	0	33.4% rag 35.6 sulphite 31.0 soda	Distinct differentiation, little or no deterioration of stain.

Table No. 3

PRESERVATION OF HERZBERG STAIN IN DARK BOTTLES WITH GROUND-GLASS STOPPERS (BATCHES NOS. 3-A, -B, -C)

Slide number	Stain batch	Age of stain (days)	Age of slide (days)	Microscopic analysis	Remarks
16	3-A	0	0	31.2% rag 33.2 sulphite 35.5 soda	(Paraffined slide.) Darker shade of stained fibers than Batch No. 2.
			1	(not counted)	All fibers much darker; too dark for accurate count.
			67	(not counted)	Color of all fibers bleached slightly, so that could now differentiate.
..	....	348	0	33.4% rag 36.1 sulphite 30.6 soda	Fibers stained slightly darker than fresh stain regularly made.
20	3-B	0	0	30.5% rag 36.2 sulphite 33.4 soda	(Paraffined slide.) Distinct differentiation..
			60	31.2% rag 38.0 sulphite 30.7 soda	All fibers slightly bleached, but gave good differentiation.
..		341	0	32.3% rag 35.4 sulphite 32.2 soda	Distinct differentiation, little or no deterioration of stain.
22	3-C	0	0	31.7% rag 36.6 sulphite 31.7 soda	(Paraffined slide.) This is about limit of dilution.
			59	(not counted)	Bleached too much for differentiation.
..		340	0	34.3% rag 35.1 sulphite 30.6 soda	Distinct differentiation, little or no deterioration of stain.

Table No. 4

PRESERVATION OF HERZBERG STAIN IN DARK BOTTLE WITH GROUND-GLASS STOPPER (BATCH NO. 4)

Age of stain (days)	Microscopic analysis	Remarks
0	(not counted)	Disfinct differentiation.
317	32.7% rag 33.6 sulphite 33.6 soda	Distinct differentiation, little or no deterioration of stain.

Table No. 2 (Batch No. 2) clearly shows that correct count of fibers is irrespective of age of stain up to 382 days. The table also clearly shows that the age of the slide causes little or no change of count up to the time of bleaching, and that paraffined edges permit differentiations up to 74 days.

Table No. 3 (Batch No. 3-A,[12] with its diluted portions 3-B and 3-C) shows that these essential results also hold (within certain limits of water content), irrespective of concentration or dilution of stain before storage.

In this table one of the paraffined slides bleached as soon as 59 days. This was from Batch 3-C, the most diluted batch. The Batches No. 3-A, -B and -C were made up some 40 days after those of Batch No. 2.

The results of Table No. 4 (Batch No. 4, which was made up some 25 days after Batch No. 3) are in agreement also, showing the results to be independent of any particular batch of stain.

Deterioration of Herzberg Stain Due to Opening of Container

A—FREQUENT OPENING OF BOTTLE: About 50 cc. of Herzberg stain, Batch No. 5-B, were stored in the regular manner (120-cc. capacity, narrow neck, glass-stoppered, reagent bottle, covered with two layers of black glazed paper). The stopper of the bottle was removed periodically for one-half minute every ten minutes or more throughout the day. This test was carried on for 39 working hours over a period of 13 days, making a total of 237 times that the bottle was opened. It shows the rate of deterioration under conditions to which the stain might be subjected in routine analytical work.

In order to determine very slight losses of iodine due to volatilization, periodically duplicate 1.00-cc. specimens of the stain were removed and titrated with a standardized solution of 0.001 normal thiosulphate,[13] using fresh starch "solution" as indicator.

A curve was plotted with "cc. of 0.001 N $Na_2S_2O_3$ to Titrate 1.00 cc. of Stain (Free Iodine)" as ordinates, and "Number of

[12] Batch No. 3-A is probably too concentrated, as shown by the fact that the stained fibers were too dark for accurate count after 24 hours. Upon standing 67 days, however, they had bleached out sufficiently so that the fibers could then be differentiated.

[13] The sodium thiosulphate solution was frequently checked with resublimed iodine according to the method given by Treadwell-Hall, "Analytical Chemistry," Vol. 2, 1919, pub. by John Wiley and Sons Co., page 645.

Times Bottle was Opened" as abscissae, showing the rate of deterioration of the stain due to opening of the bottle. Also, as a check, at the beginning and end of the test the standard mixture of fibers was stained to show what change, if any, had resulted in the staining qualities. For data, see Table No. 5 and Chart No. 1.

In the first column of Table No. 5 is given the total actual working hours during which the operations of opening the bottle were carried on. If the bottle was not opened within a span of one or more hours (e.g. over night), this time was not included.

Table No. 5

RATE OF DETERIORATION OF HERZBERG STAIN DUE TO OPENING OF BOTTLE INTERMITTENTLY (BATCH NO. 5-B)

Total working time (hours)		Total times bottle opened	Titration (cc. of 0.001 N $Na_2S_2O_3$ per cc. of stain)	Microscopic analysis
0	(1 day)	0	15.4	33.1% rag 34.1 sulphite 32.7 soda
2.5	(1 day)	15	15.2	
7	(1 day)	40	14.9	
17.5	(3 days)	106	13.8	
21	(4 days)	126	13.9	
27	(6 days)	163	13.1	
36	(8 days)	219	12.5	
39	(13 days)	237	12.0	31.3% rag 35.4 sulphite 33.3 soda

Discussion of Table No. 5 and Chart No. 1

Table No. 5 and its curve on Chart No. 1 show that the free iodine content of the stain fell off about 22 per cent by opening the bottle 237 times over the period of thirteen days, although little or no change was found in the staining ability or accuracy during this test. However, the fairly rapid loss of iodine, as shown by the sodium thiosulphate titrations, due to the frequent opening of the bottle may explain why, by constant use, the stain may have been good for only "two weeks" in the hands of some workers. Though no deterioration in staining effect was actually found, the drop in the curve shows real danger of such a point being actually reached eventually. However, any such unsatisfactory staining should not be misleading to experienced workers as they would recognize such weakened effect and discard the stain.

The loss in free iodine content is practically a straight line function of the number of times the bottle was opened, and the periods of one hour or more when the bottle was closed contribute little or nothing to the deterioration of the stain.

B—Stopper of bottle removed: About 75cc. of Herzberg stain, Batch No. 5-D, were stored as in "A" above, except that during the day-time the stopper was removed altogether. It was replaced for the night, however. Duplicate 1.00-cc. samples were titrated, as before, approximately every 1½ hours that the bottle was open. Fibers from the standard mixture were stained at the beginning

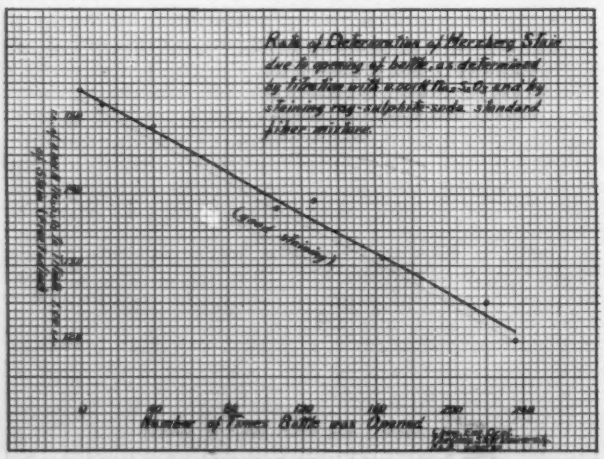


Chart 1

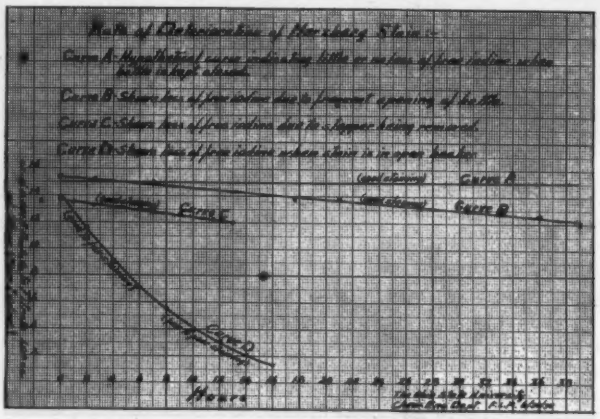


Chart 2

and end of the 13-hour test. A curve showing the rate of deterioration due to loss in iodine content was plotted, using "cc. of 0.001 N $Na_2S_2O_3$ to Titrate 1.00 cc. of Stain (Free Iodine)" as ordinates, and "Hours" as abscissae. For data, see Table No. 6 and Curve C of Chart No. 2.

Table No. 6

RATE OF DETERIORATION OF HERZBERG STAIN WHEN KEPT IN DARK GLASS BOTTLE WITH STOPPER REMOVED (BATCH NO. 5-D)

Hours in open bottle	Titration (cc. of 0.001 N $Na_2S_2O_3$ per cc. of stain)	Microscopic analysis
0	13.7	33.1% rag 34.1 sulphite 32.7 soda
1	13.5	
2.5	13.3	
4.5	13.1	
6	13.0	
7	12.9	
9	12.6	
11.5	12.2	
13	12.0	32.4% rag 35.4 sulphite 32.2 soda

Discussion of Table No. 6 and Chart No. 2

Table No. 6 and its Curve C of Chart No. 2 show that the free iodine loss is about 12 per cent in the period of thirteen hours that the stopper of the bottle was removed, even though the solution was protected against any bleaching action of light. The staining qualities have not been affected, however, by this amount of iodine loss, as shown by the accuracy of the count. Carelessness in not keeping the bottle closed may thus account for a very rapid deterioration of the Herzberg stain.

For the purpose of comparison, four curves are plotted on Chart No. 2.

Curve A is a hypothetical curve indicating little or no loss of free iodine when the bottle is kept closed.

Curve B is taken from data of Table No. 5 and is similar to curve on Chart No. 1, except that the hours of working time (actual time during which the operations of opening and closing the bottle took place) is the abscissae.

Curve C is explained above.

Curve D is explained later.

C—Open glass beaker: About 30 cc. of Herzberg stain, Batch No. 5-A, were placed in a 100-cc., regular shaped, transparent, Pyrex-glass beaker, and kept on top of the laboratory shelf in day-light (but not in direct sunlight). The test covered a period of two days, with Spring sunshine. The evening of the first day the stain was replaced in the glass-stoppered, dark bottle, which had been washed clean and dried. The following morning it was again put into the open beaker. Duplicate 1.00-cc samples of the stain were removed every two hours for titration with 0.001 N $Na_2S_2O_3$. Also, immediately after the titrations, two drops were used to stain a specimen of standard fibers, and microscopic analyses made. A curve showing the rate of deterioration of the

stain due to loss in free iodine content was plotted, using "cc. of 0.001 N $Na_2S_2O_3$ to Titrate 1.00 cc. of Stain (Free Iodine)" as ordinates, and "Hours" as abscissae. For data, see Table No. 7 and Curve D of Chart No. 2.

TABLE NO. 7

RATE OF DETERIORATION OF HERZBERG STAIN WHEN IN OPEN BEAKER (BATCH NO. 5-A)

Hours in open beaker	Titration (cc. of 0.001 N $Na_2S_2O_3$ per cc. of stain)	Microscopic analysis	Remarks
0	13.9	33.7% rag 36.1 sulphite 30.2 soda	Good differentiation.
2	11.6	33.6% rag 35.1 sulphite 31.2 soda	Good differentiation.
4	9.1	33.4% rag 35.7 sulphite 30.8 soda	Good differentiation.
6	7.1	34.0% rag 34.6 sulphite 31.4 soda	Slightly weaker shades.
8	5.6	35.7% rag 30.2 sulphite 34.1 soda	Still weaker shades.
10	3.9	Differentiation unsatisfactory.	
12	3.1	Differentiation very poor.	
14	2.1	No good.	
16	1.3	No good.	
18	0.4	No good.	

Discussion of Table No. 7 and Curve D of Chart No. 2

Table No. 7 and Curve D of Chart No. 2 show a very rapid deterioration of the Herzberg stain due to loss of free idoine by vaporization and probable bleaching of light. In six hours there was a loss of about 49% in free iodine and a noticeably weaker staining of the fibers. In eight hours there was a loss of about 60% in free iodine and a still weaker staining of the fibers. Up to this time, however, it was still possible to differentiate the fibers, even though they were not stained to the proper depth of shade. After eight hours the staining was unsatisfactory, and in eighteen hours nearly all of the free iodine had disappeared. This test is severe, but it shows clearly how the Herzberg stain will deteriorate if it is not properly preserved.

General Discussion of Results

The microscopic analyses of the stained mixture of rag, sulphite and soda fibers were well within a total error of plus or minus five per cent, so long as the stain was in good condition. The larger errors were generally due to the uncertainty of differentiating the sulphite from the soda fibers. Other sources of error may be ascribed to sampling and counting the fibers. Reasonable care was taken in these regards, although the extreme accuracy of the microscopic analyses was not the object of these experiments.

The data obtained in the titrations with 0.001 normal sodium thiosulphate indicate that this test is more sensitive for determining small losses of free iodine in the Herzberg stain than a comparison of stained fibers. For example, in Table No. 7 and Curve D of Chart No. 2, the titration test showed a loss of nearly half of the free iodine content before any noticeable difference in the shades of the stained fibers resulted.

Batch No. 1 of the Herzberg stain, which was kept in a cork-stoppered bottle, showed signs of deterioration within 12 days, and was useless in 25 days. Those batches that were preserved in glass-stoppered bottles (covered with black paper) showed little or no deterioration after about 12 months of storage.

Frequent opening of a bottle containing the Herzberg stain will however, allow more rapid deterioration. Such a test showed that 237 openings over a period of 13 days reduced the free iodine content 22%. This loss of iodine happened to be not large enough to make a noticeable difference in the staining quality of the stain.

When a batch of the Herzberg stain is to be used for routine analyses requiring frequent use of the stain, it is suggested that a comparatively large batch may be made up and carefully preserved as herein directed. From this stock may be drawn a small amount of the stain, say sufficient quantity for one or two hundred determinations, and thus the larger batch may be kept for several months. This procedure will eliminate unnecessary waste of time and material in making up a fresh batch every two weeks or so, as has been suggested by former investigators. When a batch of the stain has been made and carefully checked by staining standard fibers, it is disappointing to have to reject it because of this deterioration.

While the literature does not definitely state that the Herzberg stain must be made up in small batches, this impression is easily gained from statements regarding its rapid deterioration and the fact that all of the proposed formulas give quantities of the final mixture of about 55 cc. or less. Such a notion must have been based upon experience with batches which were allowed to deteriorate by loss of iodine either due to frequent opening of the bottle or careless manipulation. This work definitely proves that this impression is entirely erroneous as far as storage and keeping power is concerned. To preserve the good qualities of the stain is merely a matter of proper storage and handling, and large batches may be made if so desired, using small bottles of stain for current work.

The data in Tables No. 5, 6, and 7 indicate that if the bottle containing the Herzberg stain is not kept closed or if it is not protected from the light, the rate of deterioration is increased. Comparing curves B and C of Chart No. 2 seems to show that the rate of loss of free iodine is almost as great when the stopper is removed only for one-half minute every ten minutes, as when it is removed entirely.

Referring to Table No. 7, it was seen that when the stain had lost about one-half of its free iodine content it gave noticeably weaker shades upon the stained fibers. At this point an inexperienced worker may obtain inaccurate counts and may not recognize that the stain is not functioning properly. This merely emphasizes the point made by former investigators that the "proportions of the ingredients must be strictly observed," and that a known standard mixture of fibers should be stained and counted to make sure that the stain is giving correct differentiations. It also means that one must know the history of his reagent, otherwise he must analyse it if he wishes to avoid trouble.

As for the deterioration of the stained fibers on the slide, those slides that were not protected (except by being kept in a black box) deteriorated noticeably within eleven days, and within one month were bleached colorless. On the other hand, those slides that were specially protected by paraffining around the edges, preserved well for 21 days, and even at the end of 60 days showed only slight deterioration. The cause of this difference is no doubt due to sealing in of the stained fibers, thus preventing either absorption of moisture or rapid loss of moisture and free iodine from the stained fibers.

The increase in depth of shade of the stained rag, sulphite and soda fibers upon standing 24 hours is probably due to the more thorough adsorption of the stain by the fibers. The sulphite fibers were affected more in this respect than the rag or soda. On account of this darkening effect, in order to compare a newly made slide of the standard mixture of fibers, with those made several days previously, it was necessary to let the fresh slide stand 24 hours until it had reached its maximum depth of shade.

Conclusions

1—The Herzberg stain, when preserved in a tightly fitting, ground-glass stoppered, dark bottle, has a "life" of more than one year. The conclusion of former workers that this stain preserves well for only "two weeks" is therefore erroneous.

2—Slides of rag, sulphite and soda fibers stained with the Herzberg stain may be preserved for about two months by paraffining the edges to prevent change in moisture and iodine content of the stained fibers. The rag fibers "bleach out" sooner than either the sulphite or soda.

3—Volatilization of free iodine from the Herzberg stain solution is probably the most common cause of deterioration of this reagent. By making up a larger stock batch, which is checked and standardized against known fiber compositions, then by drawing smaller portions from it for active use, the possession of a satisfactory stain will be assured.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For photostatic copies of articles appearing in the Abstract Section, address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Researce Council, 21st and B Streets, Washington, D. C. The charge for this service is 25 cents per page. Copies of United States patents may be obtained from the U. S. Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Laminated Pulp Board and Process of Making the Same. Ralph L. Loomis assignor to C. F. Burgess Lab., Inc. U. S. pat. 1,737,284, (Nov. 26, 1930).—The board is built up by depositing on a traveling conveyor (felt or wire) a moist web coming directly from a cylinder machine. The filler consists of a second moist web delivered on to the lower liner at a suitable angle, the rolls delivering the filler being reciprocated across the width of the travelling conveyor so that the filler lies in transverse folds over the liner. The other liner is then delivered on top of the filler from a third cylinder mold. If desired, just before it is delivered on to the bottom liner, the filler web may be cut into narrow strips or ribbons which are laid side by side on the bottom liner; this reduces the liability of wrinkling and other irregularities at and near the folds.—A.P.-C.

Apparatus for Manufacturing Fiber Board or Analogous Material. James J. Hinde, U. S. pat. 1,748,224, (Feb. 25, 1930).—The pulp is picked up by a wire travelling around a cylinder mold. On leaving the mold the wire carrying the wet sheet comes in contact with a second wire, the sheet being held between the two wires and passing between a series of pairs of rolls which reduce the moisture content to about 50%. The sheet then passes through a drying chamber, where it is subjected to the action of hot air. In order to prevent distortion or warping of the board, it is carried through the drier between two wires on two felts. A suction chamber may be provided before the drier.—A.P.-C.

Paper-Coating Machine. Henry Nendorf and Arthur W. Cole assignors to Rex Paper Co. U. S. pat. 1,746,551, (Feb. 11, 1930).—The main object of the invention is to provide a machine for applying a coating of different colors to one side of a web of paper with the edges of the different colors meeting as a sharp line without overlapping. The coating pan is provided with two spaced partitions forming two compartments with a narrow intermediate compartment having a drain hole at the bottom. The coating feed rolls are mounted on a shaft placed higher than the level of the intermediate compartment, and a disc of larger diameter than the coating rolls is mounted on the shaft to extend into the intermediate compartment. Any of the coating material travelling along the shaft from the coating rollers is caught by the disc and drops into the intermediate compartment.—A.P.-C.

Multicolor Strip Shingle and Method of Making the Same. Chester E. Rahr assignor to The Patent and Licensing Corp. U. S. pat. 1,758,059, (May 13, 1930).—A sheet of roofing felt is coated with water-proofing material, granular material of different colors is applied to a coated face of the sheet in bands of different colors, granular matter of different colors is applied to the opposite face to form colored bands registering with the first-mentioned bands, series of slots are cut on the boundaries between adjacent colors, and the sheet is cut through the slots transversely of the color bands.—A.P.-C.

Vulcanized Fiber. F. L. Simons. Cellulose 1, 105-107 (May, 1930).—A brief review of the discovery of vulcanized fiber and vegetable parchment and discussion of the chemistry of parchmentizing and vulcanizing.—A.P.-C.

Apparatus for Impregnating Roofing Felt. Charles R. Sculley. U. S. pat. 1,751,889 (March 25, 1930).—The felt is passed around two sets of horizontal rolls, the lower ones being placed in a suitable vat or tray and the others some distance above, so that the felt forms a series of loops. The upper rolls are heated by steam or electricity. Hot asphalt under pressure is pumped into the lower rolls and discharged into the felt through slots or perforations in the shell of the lower rolls. The latter are steam-heated by means of hollow rolls telescoping into the asphalt-discharging rolls.—A.P.-C.

Machine for Making Roofing. Albert E. F. Moone assignor to The Lehon Co. U. S. pat. 1,752,751. (April 1, 1930).—The principal objects of the invention are to accurately control the length of roofing put in each roll, to eliminate the personal equation of the operator from the measuring operation, to automatically sever the sheet when a predetermined length has been rolled, and to automatically check the feed to permit the removal of a formed roll. The pulley driving the cutting roll is normally idle on the shaft until it is connected to it by a suitable clutch mechanism. The device for measuring the amount of roofing to be wound into a roll consists of a roll riding on the upper of the pair of rolls which feed the roofing through the cutter rolls. The riding roll rotates at the same speed as the feed rolls and operates a traveler which automatically throws the clutch of the cutting roll when the requisite amount of roofing has been fed through. As soon as the sheet has been severed the feed rolls stop automatically to permit the wound roll to be removed and a new core to be put in its place, and the slack ahead of the feed rolls is taken care of by the loops formed to cool and set the roofing after it leaves the saturator. The clutch of the cutting rolls is automatically thrown out after the rolls have made one revolution. The feed rolls are started up again by operating a hand lever or pedal.—A.P.-C.

Apparatus for Obtaining Marbling Effects on Paper. Francis C. Heywood, George E. Senseney and Russell S. Bracewell assignors to The Marvellum Co. U. S. pat. 1,742,250, (Jan. 7, 1930).—Russell S. Bracewell assignor to The Marvellum Co. U. S. pat. 1,742,301 (Jan. 7, 1930).—*No. 1,742,250.*—The invention relates to the process wherein paper is brought into contact with the surface of a body of water which carries the coloring pigments in the form of an irregular design on its surface, and the main object is to provide means whereby a continuous web of paper may be ornamented by a pattern that is uniform in its general aspect although in specific detail it is never exactly the same. This is accomplished by definite control of the devices and apparatus for forming the design on the body of water, that is, by distributing known quantities of the several colors in definite areas upon the surface of the water and by controlling the elapsed time for the colors to spread in irregular outlines before they come into contact with the paper. The body of water is contained in a relatively shallow annular trough, which is U-shaped in cross section and is mounted on a circular track and can be driven at any suitable speed. The paper web is passed around a roll mounted on a stationary frame so that its lower portion dips slightly into the water. The color solutions, which are insoluble in water, are distributed on to the surface of the water by feeding them into irregularly star-shaped disks which are rotated at a suitable speed, which may be varied to suit requirements, the several disks being arranged side by side across the tank to give the desired color distribution throughout its width. Each disk receives its supply of color from a supply

tube that is inclined to have its lower delivery end located near the axis of the disk. The color is contained in a reservoir in which is mounted a rotating feed roll partly immersed in the color; a scraper blade picks off the color carried up by the feed roll and delivers it into the supply tube. A rake with prongs projecting into the body of water is placed near the roll around which the paper passes to pick off the color from the surface of the water, and a fan or blower may also be mounted near the surface of the water to vary the design be spreading out the colors. Surplus liquid carried up by the paper is blown back by means of an air blast; and any coloring not taken up by the paper is removed from the body of water by passing a sheet of absorbent paper through the water back of the point where the paper to be decorated comes in contact with the water. *No. 1,742,301*—The essential feature of this invention consists in placing the color distributors very close to the point where the color is picked off the surface of the water by the paper, so as to permit of the use of very quick-drying colors, such as nitrocellulose lacquers. Also, instead of placing the color-distributing disks side by side across the tank, a construction is provided whereby they may be superposed, the various colors being supplied to the several superposed disks by concentric annular channels. The feed of color to the disks is obtained by means of rolls rotating in the color reservoirs each provided with a scraper delivering the color to the several supply tubes. The rolls in all the reservoirs are driven at the same speed, and the amount of color which they carry up from the reservoirs can be regulated by means of independently adjustable supplemental doctors.—A.P.-C.

Creping Mechanism. Samuel J. Campbell assignor of one-half to Hudson-Sharp Machine Co. U. S. pat. 1,751,471 (March 25, 1930).—The paper is creped by feeding directly from a pair of rolls in between a pair of closely spaced plates, forming a channel the walls of which retard the paper sufficiently to cause it to fold back and forth on itself when subjected to the thrust of the paper web advancing from behind. The lower creping plate is provided on its upper surface with a number of shallow recesses, into each of which is fitted a narrow spring strip riveted at its year end to the plate. Each of the spring strips is bowed upwardly near its center, above the surface of the lower creping plate, and the forward end of each spring is turned down into a vertical slot or channel in the lower creping plate, within which is located an adjusting bar to which all of the spring strips are secured and which is vertically adjustable, so that the extent to which the springs project above the plane of the creping plate can be varied as required.—A.P.-C.

Instrument for Testing the Dryness of Fibrous Material Such as Fiber Tubes. Charles Q. Ives assignor to Brown Co. U. S. pat. 1,744,120, (Jan. 21, 1930).—The instrument is designed with a view to giving a comparative measurement of the moisture content within the body of the layer of pulp constituting a fiber tube, and not merely on the surface. It consists essentially of two metallic points mounted on insulated handles and connected to a suitable source of electric current, with a current indicating device included in the circuit. The points are inserted to a given depth in the tube and at a given distance apart, the deflection of the indicator pointer depending on the moisture content of the fiber; and by determining the deflection obtained with known moisture content under known conditions, the scale may be graduated to read directly in % water when used under the same conditions. The indicating device is constructed and wired so that the deflection is unaffected by variations in the voltage of the source of electric current.—A.P.-C.

Pulp-Stock-Tonnage Regulator. Milton O. Schur assignor to Brown Co. U. S. pat. 1,744,145, (Jan. 21, 1930).—The principle of the invention consists in constantly measuring the viscosity of the supply stream of stock, automatically diluting the supply in response to such measurement, and then metering the diluted stock accurately at a predetermined rate. The stock in the chest is preferably at a somewhat higher consistency than that desired. It is pumped up through a vertical penstock near the top of which is the consistency regulator. This comprises a suitably shaped body (preferably a cone with the point down, surmounted by a relatively short cylindrical portion on the periphery of which are a number of short, outwardly extending blades) which is rotated in the stock at a constant speed. Changes in resistance to rotation, due to variations in the consistency, are made to operate the valve in the water line through which the diluting water is added to the stock in the penstock a short distance below the rotating body. In order to meter the regulated stock it is delivered into a suitable container, provided with a dam at one end to maintain a fixed predetermined level of stock therein. The metering mechanism, which is preferably placed at the other end of the container, comprises a paddle wheel mounted to revolve on a horizontal axis, the latter being at approximately the same level as the floor of the container, and the level of the regulated pulp in the container being maintained so that it is not higher than the upper limit of the paddle wheel. A curved wall is arranged to extend downward from the floor of the container, the curved wall being concentric with the axis of the paddle wheel and extending over a sufficient arc to be capable of simultaneous engagement with two of the paddles of the wheel.—A.P.-C.

Performance Standards for 0.009 Corrugated Paper. Wilson W. Galloway. The Hagar Straw Board and Paper Co., Cedarville, Ohio. Paper Trade J. 90, No. 22, 58-59 (May 29, 1930).—A discussion of the importance and necessity of formulating and adopting performance standards for .009 corrugated paper.—A.P.-C.

Specifications for .009 Straw Board. M. E. Curtis. Hagar Straw Board and Paper Co., Cedarville, Ohio. Paper Mill 53, No. 16, 4 (April 19, 1930); Paper Trade J. 90, No. 21, 55 (May 22, 1930).—A plea for the adoption of suitable standard specifications.—A.P.-C.

Endurance of Paper. Wochbl. fur Papierfabrikation 60, No. 52, 1643 (Dec. 28, 1929).—Mechanical pulp is unsuited for paper of long life. The pulp which can be used for the manufacture of durable paper must be completely washed free of the substances remaining after bleaching, the rosin content must not exceed 2%, there must be a minimum of alum and a maximum ash content of 5%.—J.F.O.

Transparent and Opaque Paper. Wochbl. fur Papierfabrikation 60, No. 47, 1462 (Nov. 23, 1929).—It is an impossibility to produce transparent paper, in the sense of glass being transparent, because paper is a heterogeneous substance composed of fibers containing cells through which the light is dispersed in all directions. Zellophane is dissolved cellulose, hence it is in a different class. Methods used for testing the transparency of paper are as follows: On a standard paper, two lines are drawn with india ink, one millimeter apart. Between this paper and the sheet to be tested, glass plates are placed with increasing thickness until both lines appear to be as one. The thickness of these plates gives a measure of the transparency. A transparent paper is made of extremely well beaten stock, the sheet being considerably moistened and finished under high pressure. The addition of cotton stock to linen rags is recommended when opaqueness of the sheet is desired. Clay and other loading materials also reduce the transparency.—J.F.O.

Special Papers for Wrapping Purposes. Pap. Fab. 27, No. 52, 1129-1130 (Dec. 29, 1929).—A description of the various kinds of wrapping papers and the machines and methods used in their manufacture.—J.F.O.

First Pergamyn and Its Development. Walter Sembritzki Der Pap. Fab. 27, No. 51, 804 (Dec. 22, 1929).—J.F.O.

Process for the Manufacture of Safety Matches From Board. Ing. F. Koppler, Dresden, Germany. Finnish pat. 12,603 (Nov. 17, 1927).—Strips made from board are provided with teeth and cuts on both longitudinal edges, corresponding to the width of the safety matches, and in such manner, that a tooth on one edge always corresponds to a cut on the opposite edge.—J.F.O.

Arrangement for Submersion of Roofing Paper, Pulp Sheets and Similar Substances, by Means of a Pair of Movable Rolls Located Over the Immersion Tank, the Rolls Lowering the Board Into the Tank. Hallesche Metallgiesserei Amaturen und Maschinenfabrik. German pat. 486,895 Kl. 55F Gr. 14 (Sept. 23, 1926).—J. F. O.

Process for the Manufacture of Artificial Wood Continuously from Wood "Screenings" With or Without Binding Materials and Filling Materials. Otto Kayser, Berlin-Schoneberg, Germany. German pat. 487,939 Kl. 39 Gr. 15 (July 26, 1928).—The process is characterized in that the wood screenings are forcibly conducted past a suction screen or a suction roll, whereby the suction is so great that a part of the long fibers contained in the wood become separated.—J.F.O.

Foil Composed of Two Layers of Cellulose Connected with Each Other. Wolff & Co. Komm. Ges. Walsrode and Dipl. Ing. Rich Weingand, Bomlitz bei Walsrode, Germany. German pat. 487,618 (Jan. 26, 1928).—A cellulose capable of swelling and one incapable of swelling are glued together with the help of an albuminous material of an urea formaldehyde condensation product or a similar hard adhesive.—J.F.O.

Isolation Pulp for Electrical Purposes. I. G. Farbenidustrie. A. G. Frankfurt a.M. Germany. Norwegian pat. 46,897 (Aug. 6, 1928).—This mass consists for the greater part of cellulose esters of higher fatty acids.—J.F.O.

Isolating Material for Electrical Purposes. I. G. Farbenindustrie A. G. Frankfurt a.M. Germany Austrian pat. 114,800.—The material is characterized therein that it consists principally of cellulose esters or a mixture containing such.—J.F.O.

Process for the Coating of Paper, Carton, Board or Similar Substances, with a Layer of Rubber. George Frederick Blombery, Lane Cove, Sidney, Australia. German pat. 487,516 (April 26, 1926).—An emulsion of rubber and colloidal clay is used.—J.F.O.

Process for the Manufacture of Rubberized Paper and Board. Carl Hisgen A. G. Worms, Germany and Julius Fochtenberger, Munich. German pat. 486,461 (Nov. 11, 1927).—The raw materials are soaked in rubber latex or a mixture of such before the heating treatment, then centrifuged or pressed and finally dried.—J.F.O.

Device for Bronzing Materials, Such as Paper, in Sheets or Rolls. Adam Schneider A.G., Berlin, Germany. Norwegian pat. 47,419 (April 28, 1928).—The bronze waste is continuously returned through a circulating pipe system by means of movable plates.—J.F.O.

Process for Water-Proofing and for Increasing the Resistance of Paper and Similar Materials. Louis Rene Mecre, Paris, France. German pat. 495,057 Kl. 55f, Gr. 11 (Aug. 15, 1926).—The paper is treated with a solution, which contains the following materials: "1" Solution, alum, knabeukrautmehl, tragacanth, algea gum and rosin; "2" Solution, borax, ammonium sulphate, salt or hartshorn and boric acid.—J.F.O.

Process for the Manufacture of Pliable Bronze Paper, Impervious to Water, and of Great Mechanical Strength and High Finish. Cellon Werke, and Dr. Arthur Eichengrun, Berlin-Charlottenburg. German pat. 485,061 (March 6, 1924).—The product is especially suited for cigaret paper and is obtained by treating pargamyn paper with organic softening materials, which gives it a greater flexibility and it is then coated with a layer of cellulose esters containing a metal powder, whereby organic softening materials are chosen which exert a gelatinous action on the cellulose esters or the cellulose ethers used.—J.F.O.

Cadmium Compounds for Impregnation. Dr. F. Woch. fur Pap. No. 6, 182 (Feb. 8, 1930).—The former methods of water proofing paper was with linseed oil and later nitro laquers, both are now being displaced by newer methods. Aluminum soap, as well as zinc and copper and others are used and precipitated on the fiber by double decomposition. The best method of water proofing with metallic soaps is in an organic solution such as benzine, benzene, toluol, etc., but this is naturally a dangerous as well as expensive proposition, as it is economically impossible to recover these organic solvents. Cadmium oleate has shown excellent results, in that besides being practically insoluble in water and requiring no organic solvent, it becomes emulsified into a very fine cadmium oleate milk by the addition of small quantities of ammonia. The cadmium oleate milk is easily applied to the various materials which it renders water proof, as well as makes air tight, which in itself is a very valuable property. Steric acid and palmitic acid can also be used in connection with cadmium.—J.F.O.

Device on Machines for the Manufacture of Pipes and Other Hollow Bodies from Wood Pulp in Sheet Form. Brown Co. Berlin, N. H. U. S. A. Norwegian pat. 47,433 (July 15, 1922).—J.F.O.

Process for Pasting Together Foils from Cellulose Esters with Paper Carton and Similar Substances. Nobel-Film G.m.b.H. Hamburg, Germany. German pat. 486,534 Kl. 55f Gr. 1 (Oct. 20, 1926).—It has been found that foils of cellulose esters unite with paper carton and similar substances purposely in such a way, so that the foil is provided with a very thin layer of size gelatine or similar binding materials, which are moistened on the surface before attaching and are heated with the aid of a hot roll. By the union of the two in the usual gluing method, only the surface of the swollen mucilaginous layer melts under the action of the heat of the roll and the paper is thus intimately combined with the cellulose ester without the occurrence of stretching or folding.—J.F.O.

Specialties

Influence of the Presence of Gamma Cellulose on Swelling of a Cellulose Cardboard in Alkalies. V. I. Sharkov. ZUHR. Prikladnoi Khim. 2, 749-752 (1929).—Experiments show that beta and gamma celluloses have different swelling properties in caustic soda solutions.—C.J.W.

Power

Pressure and Temperature Instruments. Reginald Trautschold. Paper Trade J. 90, No. 16, 48-54 (April 17, 1930).—Brief explanatory notes are given indicating the extent and reason for the very wide range of truly profitable instrument applications in pulp and paper mills. Some typical modern instrument applications are briefly described.—A.P.-C.

Heat and Power Problems with High Pressure Steam. W. R. Crute. Champion Fibre Co., Canton, N. C. Paper Trade J. 90, No. 23, 89-91 (June 5, 1930); Paper Mill 53, No. 22, 36-38 (May 31, 1930).—A brief discussion pointing out how, by the intelligent use of high pressure steam, fewer heat units need be allowed to escape to the sewer. and mentioning some of the grief that may be encountered by failure to recognize the fact that the methods of manufacture and of operation of high pressure boilers must be different from that of low pressure boilers.—A. P.-C.

Coal Handling Systems: Storage and Reclamation. Reginald Trautschold. Paper Trade J. 90, No. 22, 38-46 (May 29, 1930).—Examples are given of some modern coal handling systems installed in pulp and paper mills, showing the economies resulting from their use.—A. P.-C.

Heat Conductivity of Boiler Scale. Chr. Eberle, Darmstaadt, Germany, Papierfabr. 27, No. 51, 809 (Dec. 22, 1929).—The heat conductivity depends greatly on the porosity of the tube scale, which is in turn influenced by the composition of the scale. Scale with little silica but large amounts of calcium sulphate possesses a low porosity but a high heat conductivity. Scale rich in silicate causes tubes to burn through when there is only .5 millimeters thick of scale, but with scale having little silicate it can be as thick as 3 millimeters.—J.F.O.

Carrying Over of Water From Steam Boilers. Chr. Eberle, Darmstadt, Germany, Papierfab. 27, No. 51, 806 (Dec. 22, 1929).—Results show that the moisture content of steam remains almost constant within wide variation in load, but beyond a certain load, the moisture content rises very rapidly. The limit, that is, the capacity at which a heavy carry over of water begins, is not only dependent on the heating surface, but also on the height of the

steam space. At various steam pressures for a determined steam space, the limit in cubic meters per unit height is the same. The method of introducing the steam into the drum, influences to the highest degree, the limit of the capacity. The capacity limit increases with increasing height of the water, which has to penetrate through the steam in the drum and reaches its maximum when the steam is immediately led into the steam space.—J.F.O.

Askania Gas Burning Apparatus with Pressure Equalizer for Chimney Draft. Pradel Papierfabr. 27, No. 49-773 (Dec. 8, 1929).—It is a known fact that in gas furnaces a certain determined amount of power is required to introduce the gases and air, to mix them and to remove the burnt gases. Pressure appli- This is attained by the Askania regulator which in its simplest system. In order to get the highest efficiency, the pressure of the flue gases and the pressure of the introduced gases should be equal. This is attained by the Akania regulator which in its simplest form consists of a gate valve arrangement in the flue connected to the regulator itself which governs the pressure and amount of gas and air admitted to the furnace.—J.F.O.

Making Use of the Combination of Heat and Power. K. Jaroschek, Aachen, Germany. Wochbl. Papierfabr. 60, No. 47, 1465 (Nov. 23, 1929).—Possibilities for heat economy, "1," by improving the use of exhaust steam, thus decreasing the waste steam without any great expenditure of capital. "2" By improving the heat balance by rebuilding the old condensation steam engine and using bleeder turbines. The efficiency of this rebuilding increases with steam consumption, increases with the difference in pressure and increases with the efficiency of the high pressure cylinder.—J.F.O.

Modern Paper Machine and Calender Motor. Dipl. Ing. Lorenz Kressling. Berlin Siemensstadt. Papierfabr. 27, No. 52, 758-762 (Dec. 29, 1929).—A thorough description of the alternating shunt motor and its application to the paper machine drive and especially the calenders—J.F.O.

Electric Boiler Installation in a Paper Mill of Padalarang, Java. E. Walder Wochbl. Papierfabr. 61, No. 7, 207 (Feb. 15, 1930).—The electric boiler is used in conjunction with an oil fired, which was used for the peak loads and the three hours when the consumption of electricity in the nearby town was at its maximum. Complete facts and data given on the installation. A steam accumulator is used.—J.F.O.

Boiler Scale Preventatives, Composed of a Mixture of Tannins and of Inorganic Deoxydation Substance. La. Suvapo, "Societe Anonyme," Paris, France. German pat. 487,050 (Jan. 21, 1926).—A cerium salt is used as the inorganic deoxydation means. —J.F.O.

Means of Removing Boiler Scale and Hindering the Formation of Boiler Scale. Edward D. Feldman, Berlin, Germany. German pat. 486,965 Kl. 85b Gr. (Jan. 14,1928).—The substance is composed of plant or animal oil or rubber, sulphurated and saturated with alkali.—J.F.O.

Process for the Softening of Water. Karl Morawe, Berlin, Germany. German pat. 492,145 (Jan. 29, 1925).—The water is purified by the return boiler water and the following softening of the remainder through the interchanging of the bases. The process is characterized in that, the carbonate hardness of the introduced raw water is only partially or not at all separated in the precipitation purifier, so that the quantity and the concentration of the returned boiler water is correspondingly measured out in the purifier. The water so purified is completely softened by the interchanging of the bases, whereby, if necessary, between the purifier and the base inter-changer, a part of the feed water flowing through the heat inter-changer for the cooling of the purified water heated by the hot boiler water, to a temperature harmless to the stability of the base inter-changing, is introduced.—J.F.O.

Miscellaneous

Modern Paper Mill in Mexico. Anon. Paper Trade J. 90, No. 15, 34-42, 53 (April 10, 1930).—An illustrated description of the San Rafael Paper Mill.—A.P.-C.

Steam Improvements at Standard Paper Manufacturing Co. H. G. Burrill. John D. Hamilton, Baltimore, Md. Paper Trade J. 90, No. 22, 56-58 (May 29, 1930).—A description of the changes made at the plant of the Standard Paper Mfg. Co., Richmond, Va., on account of the installation of a new 120-inch paper machine, with special reference to the steam generating and utilizing equipment.—A.P.-C.

Nova Scotia's Newsprint Mills. J. H. Mowbray, Mersey Paper Co.; and J. Newell Stephenson, Pulp and Paper Mag. of Canada. Pulp Paper Mag. Can. 29, 751-765, 767-770, 778-786 (June 5, 1930).—A detailed illustrated description of the Mersey Paper Co., 250-ton newsprint mill at Liverpool, N. S., bringing out its distinctive and unusual features.—A.P.-C.

New Paper Machine of the Cellulo Co. L. E. Milkey. The Cellulo Co., Sandusky, Ohio. Paper Trade J. 90, No. 15, 57-59 (April 10, 1930).—A description of the machine developed by the Cellulo Co. for the production of absorbent papers. The paper is formed on a fourdrinier table and is transferred by direct contact with heated top press roll of large diameter mounted in fixed bearings. The wire is brought against or trained around a part of the periphery of the press roll. A soft rubber press roll, inside the wire and pressing the wet sheet firmly against the top press roll, insure the transfer of the wet paper. One or more bottom press rolls, each with its own felt, are pressed upwards against the top roll. The paper after passing through the press is permitted to follow its natural tendency to cling to the surface of the top roll and at a point above is loosened by a doctor blade, which in this case also produces the desired amount of crepe in the paper; or it may be stripped off and run around a customary draw roll if no crepe is desired. Heating the large top press roll gives the advantages of preheating of the sheet. Special part-cotton part-wool felts have been found to have a greater water removal quality on a machine of this type than the usual type of felt.—A.P.-C.

Paper Research Literature VII (Revised). Clarence J. West, National Research Council, and B. W. Scribner, U. S. Bureau of Standards, Washington, D. C. Paper Trade J. 90, No. 21, 51-52 (May 22, 1930).—A list of contributions by members of the U. S. Bureau of Standards during 1929, with brief abstracts.—A.P.-C.

Need for Research. George French. Cellulose 1, 122-125 (May 1930).—An outline of the research program of the Pulp and Paper Division of the Forest Products Laboratories of Canada.—A.P.-C.

How Materials are Handled and Distributed in New England Paper Mill. F. A. Westbrook. Materials Handling and Distribution 3, No. 2, 15-17, 82 (1929).—Materials-handling equipment in the mill of S. D. Warren Co., Cumberland Mills, Maine, for handling pulp, wood, clay and coal is described.—C.J.W.

Rust Protection and Rust Removal. Woch. fur Papierfabr. 60, No. 51, 1611-14 (Dec. 21, 1929).—The paper mill is very susceptible to rusting as all the conditions for its formation are favorable, not to mention chlorine gas and sulphur dioxide. The rust formed does not give a protective coating. Metallic coatings are arranged in three groups, according to their method of manufacture, "1" rolled or welded, "2" galvanized and applied in a fluid form, and "3" sprayed. On smooth surfaces, such as sheet, rolls, etc., copper, nickel and aluminum are used with iron, the coating surface must be without pores. Lead is applied to resist the sulphur dioxide gas while nickel and chromium is used for hardness and heat protection. Zinc and aluminum are principally used in the spraying method, the desirability of zinc is due to its position in respect to iron in the electro potential scale. The spraying process, although new, has a great many advantages; its cost in Germany being from twenty to twenty-five cents a square yard.

For removing rust, a special automatic hammer operating at 6,000 beats per minute is used. A rotating hammer has also been put on the market which operates at 60,000 beats per minute. When the pitting of the metal is to be avoided, a grinding

apparatus is used. The most ideal method of removing rust is the sand blast, using one to three atmospheres pressure and at a very low cost. A chemical method to remove rust is also used, in which a rust solving substance is painted on the metal and then washed off, as soon as possible, with milk of lime.—J.F.O.

Bituminous Coatings as a Protection for Materials Against the Elements. Dr. A. W. Rick, Stuttgart. Zellstoffu. Papier. 10, No. 2, 91 (Feb. 1930).—The author describes the many places in a pulp and paper mill which are in need of a protective coating and shows how bituminous materials give best results.—J.F.O.

Mechanical Raw Water Filter. Wochenbl. fur Papierfabr. 60, No. 52, 1645 (Dec. 28, 1929).—The patented Wanger Filter is composed of two cast iron ends with a hollow trunnion or axel through which the unfiltered water runs into a cylinder which is covered with wire. The water from the shaft is evenly divided within the cylinder and flows outward, the sediment collected upon the screen is raised to the top where a shower sprays the impurities onto a trough within the cylinder which leads to the other end of the shaft where the impurities leave the filter. A filter of about 1.5 meters in diameter and two to three meters long has a capacity of 10,000 to 15,000 liters per minute. The drum revolves with its shaft in roller bearings and requires about one horse power. No attention or care is required and the installation is cheap.—J.F.O.

Pile Driving. Walter Sembritzki.. Wochbl. Papierfabr. 61, No. 4, 113 (Jan. 25, 1930).—J.F.O.

Illumination Installations for Paper Mills. N. Oglobin Wochbl. Papierfabr. 61, No. 6, 185 (Feb. 8, 1930).—Mill illumination is costly and any means to reduce it should be taken. The condition of the walls and ceiling as well as the air itself determines to a great extent the method of illumination to be used. The use of frosted bulbs increases the power consumption 5-15 per cent.

From the Wood Yard to the Shipping Department, a Technical Conveyance Problem. Ing. Karrad Zapf, Dresden, Germany. Wochbl. fur Papierfabr. 61, No. 1, 13-15 (Jan. 4, 1930).—The author shows the application of certain traveling cranes which are especially adapted to the conveyance problems in a pulp and paper mill.—J.F.O

Arrangement for the De-Watering or Drying of Moist Fiberous Materials by Electrolysis. Ing. R. Wendle, Stockholm, Sweden. Swedish pat. 68,834 (Feb. 15, 1926).—The material is led in band form between two electrodes, of which the positive is composed of a rotating cylinder and the negative is composed of an endless hand surrounding the cylinder. The electric current acts between the two poles upon the material to be dried. Both electrodes are permeable to the gases evolved. A collecting device for the oxygen is placed in the inside of the cylinder and over the pole composed of the band is a like arrangement for the collection of the hydrogen evolved.—J.F.O.

Trade Customs in the Marketing of Waste Paper. Papierfabr. 28, No. 2, 30 (Jan. 12, 1930).—An attempt to standardize the classification of waste paper by a committee formed of men from both parties concerned. Results are given.—J.F.O.

Duty of the Control Department and its Means of Control. C. Strobach, Wochbl. fur Papierfabr. 60, No. 51, 1602-1606 (Dec. 21, 1929).—Ways and means on the machine of obtaining opaqueness, feel, finish, etc., are discussed. Sources of trouble and their alleviation, given in detail. Dandy roll care and operation, wire, felt, press rolls, drying cylinder, etc., all given a thorough explanation, as well as things to be looked after during a shut down.—J.F.O.

Report on the Meeting of the Committees, and of the Fiber Testing Commission, Held at the V.D.I. House in Berlin, Dec. 5, 1929, Papierfabr. 27, No. 50, 781,971; No. 51, 797-803 (Dec. 15, 22, 1929).—Lengthy and detailed report of the entire proceedings.—J.F.O.

Meeting of the Berlin Section of "Der Verein Der Zellstoff-Und Papier-Chemiker Und-Ingenieure." Progress and the Latest in the Testing of Paper. By Korn, Berlin Dahlem, State Testing Laboratories. Wochbl. Papierfabr. 61, No. 7, 205 (Feb. 15, 1930).—The author reported on the improvement in methods and apparatus used in the testing of paper, especially as used in the state material testing laboratory. Among the subjects mentioned were fibre analysis using new color solutions, the pop test using the new Schopper Dalen apparatus, determination of acidity colorimetrically and electrolitically, testing the opaqueness and the improvement on apparatus for the determination of gloss, whiteness and the color of the paper. The decomposition of pine wood according to the sulphite process by Dr. Berndt. The pretreatment with dilute sodium hydroxide, then steamed with acetic acid and dried at 105° C. is supposed to eliminate many of the difficulties. The current literature and other work done on the subject was quoted.—J.F.O.

General Meeting of Der Verein Der Zellstoff-Und Papier-Chemiker Und Ingenieure. (Dec. 7, 1929).—Wochbl. Papierfabr. 60, No. 50, 1567-1577 (Dec. 14, 1929.—J.F.O.

Benefits of Speed Instrument Control. Reginald Trautschold. Paper Trade J. 90, No. 14, 50-58 (April 3, 1930).—A general description of some of the approved types of speed instruments available, with incidental references to a few of the applications in pulp and paper mill services which have been productive of desirable improvements in mill operation.—A.P.-C.

Instrument for Measuring the Temperature of Calender Rolls. Charles B. Thwing assignor to Thwing Instrument Co. U. S. pat. 1,730,308, Oct. 1, 1929.—An elongated handle is terminated in an enlarged head portion which provides a housing for two thermocouples. The latter are placed so as to be very close to, but not quite in contact with the surface of the calender roll of which the temperature is required. The actual contact of the instrument with the roll is effected through ball or roller bearings, to reduce friction to a minimum, and in addition, a guard is provided to protect the thermocouples from damage.—A. P.-C.

TAPPI Notes

A. E. Sjoman formerly chemist of the Filer Fibre Company, Filer City, Mich., is now with the Tomahawk Kraft Paper Company, Tomahawk, Wis.

Paul E. Hodgdon formerly chief chemist of the Munising Paper Company, Munising, Mich., is now manager of manufacturing of the Deerfield Glassine Company, Monroe Bridge, Mass.

A. Lampen, managing director of the Tornator Company in Finland, sailed for Europe recently, after visiting the Southern and Pacific Coast mills.

A. Suter is now general superintendent of the Bogalusa Paper Company, Bogalusa, La.

Paul Koenig, manager of manufacturing of the Continental Paper and Bag Corporation is on his way to Germany to attend the 25th anniversary meeting of the Verein der Zellstoff und Papier Chemiker und Ingenieure at Berlin.

Gustaf Asplund formerly pulp and paper expert at the Swedish Consulate is now connected with the Svenka Cellulosa A/B at Stockholm, Sweden.

Clyde Paper Company Joins TAPPI

The most recent Corporate addition of the Technical Association of the Pulp and Paper Industry is the Clyde Paper Company Ltd. of Rutherglen, near Glasgow, Scotland. This company operates a three machine mill making writing paper, newsprint, printing papers, cartridge, envelope and esparto papers, as well as lithographic, art and coated papers. About three hundred tons total are made weekly.

During the past few years the Clyde Paper Company have spared no pains to arrive at maximum efficiency in every department. One of the most interesting of its recent developments has been the completion of the most scientifically complete and efficient type of drying plant now operating in the British Isles. The Clyde Paper Mills will be represented in the Technical Association by L. M. Worling, secretary.

Section of the
COST DEPARTMENT
of the
American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

Standard Accounting and Cost System for the Paper and Pulp Industry*

By L. C. Reynolds[1]

In speaking today on standard accounting and cost system for the paper and pulp industry I have in mind that the enthusiastic response to the invitations sent out would make a discussion out of place as to the benefits to be derived from such a procedure. One must assume that the attendance at this meeting is sufficient evidence of the value of the work which this meeting expects to get under way. I will however take this opportunity to state that there are different conceptions of the meaning of the word "standard" as applied to any of our individual efforts today. With some people who devote their whole time to standardization efforts, the standards become almost an end in themselves. I would like to have standards viewed as a *means* of accomplishment and if the objective is kept in view at all times and if the details are not allowed to obscure this objective then I believe that Standards can always be instituted such that they will have removed from them those objectional features which always present themselves when that word is mentioned. A Standard should never be anything that is inflexible or rigid or static; but a Standard should be dynamic and always moving forward to a higher plane as Industry progresses. To that end, our standards should always be looked upon as having been adopted for use until something better comes along and should be put in such final form that they can be easily altered at will.

Differing Methods

Another thing that we should remember at the outset is that there will probably never be unanimous agreement on the necessary items of procedure and that we can never have majority conclusions as to the minor details. It seems apparent that our efforts should be confined to bringing conclusions as regards the elements of our accounting system and that in certain phases we must recommend alternate methods, and that we must leave the details to the individual members themselves. In other words, our objective in uniform cost procedure is to arrive at an agreement such that our total costs and certain elements of same are all arrived at on a uniform basis. Our objective is therefore to set up such a procedure that we are all striving for the "same thing" but we must recognize that there is always *more than one way* to arrive at the same thing. We have within our industry individual pulp mills, individual paper mills, and mills that are a combination operating pulp and paper mills jointly. Each presents different problems and different ways must be evolved to suit these different conditions so as to arrive at the same thing. Also some members have many units and some have but one. Also some have units of a variety of work and others have their units confined to one line of work. Such varying conditions, together with difference in method of organization, will also call for different ways in which to arrive at the same objective.

First Objective

I believe that we have two major objectives in our endeavor to establish uniform accounting procedure.

The first and foremost is to be sure that we are all figuring our costs on the same basis so that our resulting selling prices will be based upon similar information. This involves the establishing of a procedure, which when the different members examine their own existing procedure and compare it with the uniform procedure adopted, will enable them to know whether they are including all of the items in their costs.

Second Objective

The second objective is to set up a Uniform procedure with regard to financial statements so that future statistics collected for the Industry will be on a comparable basis and therefore will be of more use to its members. Such a procedure need not alter the existing accounting practice of any institution except such minor changes as may be necesary to accumulate information so that reports rendered to headquarters can be made in the standard form. In fact, none of the uniform accounting procedure adopted need be necessarily incorporated in existing systems nor would it be necessary for any member to change his system or supercede it by the procedure adopted. However, a well thought out Uniform procedure may in time supplant existing accounting systems in a great many organizations but it should be a voluntary matter with these organizations.

What Is to Be Accomplished

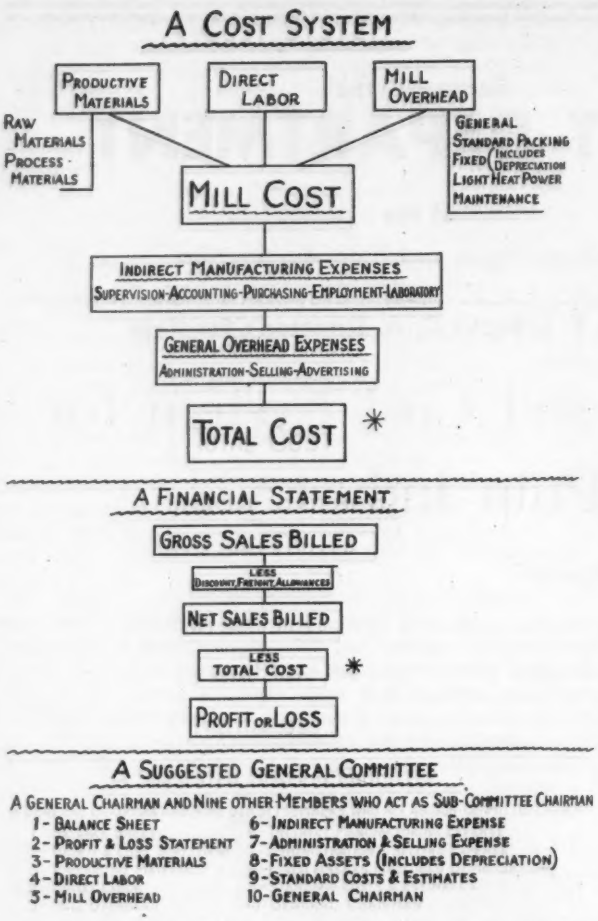
It is desired that this address point out specifically *what* is to be accomplished and *how* it is to be accomplished, and I believe that we need but focus our attention on a few elementary steps in order to get the machinery started in the right direction. With this in view, a chart is submitted at this point for reference in the balance of this paper.

The Chart

The object of this chart is to show the elements of a cost and

* Delivered at meeting on Uniform Cost Procedure held by the Cost Department of the American Paper and Pulp Association, Buffalo, N. Y., November 20, 1930.

[1] Comptroller and Assistant to President of the American Writing Paper Co., Inc.



accounting system. Please do not consider that we must enter a discussion with this chart unaltered. I believe the elements shown are all necessary to be shown and discussed but they are of course subject to rearrangement and of possible different division. The arrangement shown is that used in some of our foremost industries which have had the benefit of the most experience under modern management methods and I believe that the form shown is worthy of serious consideration. This form will at least serve as a basis for open meeting discussion and for the formation of our preliminary organization. In other words, it will give us something definite to talk about.

Direct Costs

The general objective of the best cost systems is to apply all costs as directly as possible and pro rate as little as possible. With this in mind, it may be well to include within productive materials all items of material which go directly into the product. Labor has been likewise treated in this chart.

Overhead

With regard to mill overhead or in fact any other overhead, there are different ways of distributing this overhead, and in this respect I believe that our uniform accounting procedure will have to give recognition to different ways of spreading overhead. The uniform procedure of the electrical industry devotes a whole page to this matter and shows four different ways of doing this. In the explanation of the four different ways they also give the reasons for and against each method and also conditions under which each one of them is most desirable, pointing out that the same method is not always desirable in the different companies of the electrical industry. I believe that we must face a similar situation and decide that the important thing in the end, is the arriving at the "same thing" but using anyone of four different ways to arrive. I note here the four different ways mentioned by the electrical industry, as follows:

(a) Pro rated on the direct labor dollars.
(b) Pro rated on the direct labor hours.
(c) Pro rated on the machine hours.
(d) Pro rated according to material cost.

Waste

In our mill cost there is another important matter which should be given attention with the view of being sure that this is included in all costs. I refer to the cost of wasted raw material and the cost of "broke" as well as the other shrinkages of raw material. The definitions of "Shrinkage", "Waste" and "Broke" might well be made and a procedure adopted for getting them into the cost.

Development

In the mill cost there is also the matter of *somehow* having included *somewhere* the extra amount of money spent in making small runs; in making experiments; in developing new papers; and in making special colors. Other Industries call such work "Development Cost" and spread this in their cost, in some such manner as Overhead is spread.

Idle Capacity

Another subject which needs serious consideration is the treatment of Idle capacity. It is well known that there always has been discussion as to whether the overhead should be spread over the capacity or over the expected output when the expected output is continually way below capacity. It is very obvious that overhead spread over capacity with continual under production is always leaving unabsorbed expense which does not get into our individual costs but it nevertheless must come out of profits.

Depreciation

Another matter which needs considerable consideration is the adoption of standard percentages for depreciation. This is very important if our depreciation charges within our various estimates are to be upon a fairly competitive basis. This is a subject matter of two pages in the uniform cost procedure of the electrical industry previously referred to.

Terminology

It might also be well to consider the definition of mill cost and I believe that some organizations will not only want to use the term "mill cost" but also the term "manufacturing cost." For some time past, I have been accustomed to call as manufacturing cost the mill cost plus the indirect manufacturing expense. I believe that some such term as "manufacturing cost" is worth adopting so as to determine the cost of the product up to the point of distribution. In other words, the inventory value of finished product would be manufacturing cost.

Immediate Needs

If I were to list some of the immediate needs or subjects which ought to be pressed by the committees, I would select the following list:

1—Control Accounts
2—Estimates of Cost
3—Methods of Absorbing Overhead
4—Methods of Absorbing Losses
5—Methods of Absorbing Experimental and Abnormal Runs
6—Methods of Absorbing Idle Capacity
7—Depreciation Rates
8—Standard Costs

How This May Be Accomplished

The foregoing has been an attempt to state in general terms what we might accomplish and I wish now to give consideration as to how this might be accomplished.

This whole subject matter divides itself well into about nine divisions of work. Each of these nine divisions might well be made of the subject matter for separate committees to work upon. The chairman of each one of these nine committees might well constitute a general committee to which might be added a tenth member who would act as general chairman. In other words, we would select a general committee of ten members, one of whom would become general chairman and each of the other nine would become chairmen of sub committees, each dealing with one of the nine divisions of the work. If such a committee were selected, it might well elect its own chairman and divide up its work and decide upon the description of the work of the nine sub committees itself. This decision could well be reached by such newly elected committee before we leave the present Cost Convention and at the same time those present or any others available, could be assigned to the various sub committee chairmen to give them assistance in carrying through this work and each of the sub committees might well have a preliminary meeting before leaving this cost convention. No one need expect rapid conclusions in such a matter as this which by experience in other industries has taken a long time. The recommendations of any sub committee would need to be approved by the general committee and then submitted to the Industry for vote; and the procedure would involve a time interval which is anybody's guess. At this point, I might submit as a basis for consideration the possible nine divisions of this work and would say that this will be found by reference to the chart previously referred to, which chart shows the suggested description of the work of each of the sub committees. It is hoped that this will be simply taken as a basis for discussion and as not submitted with any other attitude of mind.

Pulp and Paper Mills

Although we have both pulp and paper mills to consider and a combination of the two, nevertheless, it may seem advantageous to work out a system first for the paper mills and taking up the pulp mills second or working them out with parallel committees. Perhaps the first plan might be better as the working out of a system for pulp mills would be much simplified after having decided upon procedure for the paper mills where doubtless more items would be involved.

The Application

It is hoped that we can all enter discussion of this program through the coming months or years with a willingness to change our ideas without at any time anyone feeling their accounting procedure must be changed in entirety to meet the procedure adopted, and we all ought to feel that we shall use our best endeavor to add to our existing accounts or divide same where necessary with sub divisions such that we shall know to our own satisfaction that our costs represent in total the same thing as they would if made in the standard uniform procedure adopted. Also, furthermore, that some adaptions may be necessary so that any reports which are made by ourselves for use of the industry would represent the "same thing" as that called for by the uniform procedure adopted. In other words, let us always keep in sight that our objective is to all be able to arrive at something which represents the same thing throughout the Industry and that it it not the way we arrive that counts as much as the "arriving"; and that wherever our uniform procedure points the way or alternate ways, it is simply done with the view of explaining what it is expected we shall arrive at.

Finnish Paper Exports for October

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 3, 1930.—Finnish exports of paper during the month of October aggregated 24,417 metric tons bringing the total for the first ten months of the year up to 214,281 tons. Shipments to foreign countries during the corresponding period last year were 24,955 tons and 199,057 tons respectively.

Hearing on Alleged Dumping of Salt Cake

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930.—H. A. L. Swan of the Southern Kraft Corporation, Nils R. Tierin of the St. Regis Paper Company, and O. M. Porter of the National Kraft Paper Manufacturers Association were present at the hearing at the Customs Bureau in connection with the alleged dumping of German salt cake on the American market last year.

Mr. Swan said that "it is apparent to me that the production of salt cake in the United States has not kept pace with the development of the kraft pulp industry and it is evident that the domestic salt cake producers could not adequately meet the needs for this product during early 1929." He contended that his company met with difficulties in purchasing sufficient salt cake during that period.

Mr. Terein said that there is not enough high grade salt cake produced in the United States adequately to supply those industries requiring that material. We are compelled, he said, to use imported salt cake, and would face difficulties if we were not able to purchase it from foreign countries.

Representing the Sodium Products Corporation of San Francisco, Cal., as its attorney, Jesse Crawford stated that there was a "dumping" of from 13,000 to 14,000 tons of German salt cake on United States markets during the first four months of 1929. This, he stated, exceeded by over 2,000 tons the total imports of salt into this country in 1927 and it is something from which the domestic producers need relief.

It is our contention, Mr. Crawford said, that if there was dumping and if injury to domestic salt cake producers resulted, the Department of the Treasury should levy a dumping duty as provided by law. Information was presented showing that there are approximately 16 producers of salt cake in the United States, 15 of which are chemical producers and the 16th a producer of natural salt cake.

Representatives of paper manufacturing concerns in the United States contended opposite from the domestic salt cake producers, holding that there was no "dumping" of salt cake on local markets during the first part of 1929, but on the contrary these imports were necessary to the successful operation of their organizations.

Placing any substantial duty upon foreign salt cake imported into the United States would very likely increase the cost of producing kraft paper in the United States, for which commodity salt cake is a necessary raw material, so as to make it impossible for American kraft paper concerns to produce in competition with outside companies, and thereby result in their going out of business, it was stated by Major Oliver M. Porter, manager of the National Kraft Paper Manufacturers' Association.

American industries dependent upon salt cake for their business have decided that they need a free duty on foreign salt cake in order to continue successful operation. It was impossible for American kraft paper producers to obtain adequate domestic supplies of salt cake during the early part of 1929, Mr. Porter said, because there was a shortage of that product in this country. Therefore, he stated, the importations of German salt cake were necessary and there was clearly no "dumping" of that commodity on our markets. "We strongly object to any increases in duty on foreign salt cake which would substantially increase our costs," he said.

Arthur J. Siegel, vice president of the M. Gottesman & Co., Inc., New York City, said that an analysis of the facts indicate that there was no "dumping" of German salt cake on American markets during the period in question. "Prices did not decline as a result of these foreign importations as there was a scarcity of salt cake in the United States at that time." The American consumers of this product are actually dependent upon foreign importations.

"The 1929 price paid by our company for salt cake," he said, "was more than we paid in 1925 when foreign imports were practically nil." He cited several instances purporting to show wherein the imports of German salt cake had no bad effect upon the business of a number of American producers.

Obituary

Charles N. Mooney

[FROM OUR REGULAR CORRESPONDENT]

LEE, Mass., December 9, 1930—Charles N. Mooney, 64, superintendent of the Eagle mill of the Smith Paper Company, died Thursday at his home after a short illness. He was well known in paper making circles in this section of New England, being a member and former president of the Connecticut Valley Division of the American Pulp and Paper Mill Superintendents Association.

He was first employed by the Smith Paper Company in their Columbus mill in 1882. His father, the late William N. Mooney, was machine tender at the time. He had been connected with all the mills of the company in one capacity or another during his life. In 1903 he was made superintendent of the Niagara mill in 1911 on the death of Thomas A. Boyne, who had held the Columbia mill. He took over the superintendency of the Eagle mill in 1911 on the death of Thomas A . Boyne, who had held the position of general superintendent of all the mills of the company.

Mr. Mooney, who was born in Lee, was a member of the Pittsfield Lodge of Elks, Berkshire Hills Council Knights of Columbus, and charter member of Court Ferncliff Foresters. He leaves one son, William, of New York; one daughter, Mrs. Martin Leah Graney, of Mt. Vernon, N. Y.; two sisters, Misses Bessie and Minnie, of Lee; and two brothers, Frank and William, also of Lee.

Richard C. Chapin

HOLYOKE, Mass., December 8, 1930—Richard C. Chapin, a prominent figure in the paper industry, died here yesterday in his seventy-second year. He began his career forty-five years ago as a helper in the Riverside Mill here and at his death was a member of the corporation of the American Writing Paper Company, Inc. He graduated in 1879 from New Hampshire State College and in 1884 from the United States Military Academy at West Point, and was permanent secretary of his West Point class.

D. C. Everest on Timber Conservation Board

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930.—D. C. Everest of Wausau, Wis., was last week appointed the paper representative on the Timber Conservation Board which was named by President Hoover. Secretary of Commerce, Lamont, is chairman of the Board. The first meeting will be held after the Christmas holidays.

Others appointed on the Board include: Charles Lathrop Pack, president of the American Tree Association; Louis J. Taber, master of the National Grange; Secretary of Agriculture, Hyde; Secretary of the Interior, Wilbur; John R. Blodgett, Grand Rapids, Mich.; W. M. Ritter, Columbus, Ohio; John C. Merriam, president of the Carnegie Foundation, this city; Paul G. Redington, president of the American Society of Foresters; and Carl R. Gray, president of the Union Pacific Railroad.

Pulp Exports From Sweden Decrease

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930.—Exports of pulp and paper from Sweden during the nine months ended September 30 are uniformly under those of the corresponding period of last year, mechanical ground wood shipments having declined by 7 per cent, sulphite shipments by 9 per cent, sulphate shipments by 20 per cent and paper by 8 per cent.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 8, 1930.—John Carter & Co., Inc., are making a drive on the sale of paper to be used for annual town reports. Their offerings include the Alrite town report paper, a new stock which prints easily and dries quickly. They have available also Weymouth town report book, which was last year's most popular town report paper. The Alrite town report cover is offered in four shades—blue, brown, India and gray. The Special Lot cover is granite shade.

Carter, Rice & Co. Corp., now advertising cellophane for the printing trade for the first time, feel that this commodity provides for a new type of business for that industry. The current issue of the bargain catalog of that firm contains a sample of cellophane, beneath which are printed advantages of this product. The description notes the attractiveness, visibility and protection against atmospheric changes and handling while on display.

William L. Reinhardt, for the last 27 years assistant superintendent of the plant of the Library Bureau, Cambridge, Mass., has joined the Ames Safety Envelope Company as vice-president and manager in charge of factory operations. The Ames Safety Envelope Company has removed from 55 Sudbury street to 610 Atlantic avenue. The new plant will provide increased floor space for the large amount of new, special machinery which is being installed. The location will facilitate shipments because of its proximity to the South Station and other Boston transportation terminals. The building, six stories high, has been completely renovated and modernized.

The annual statement of the Erving Paper Mills, Erving, Mass., is as follows: Assets—Real estate, $183,659; machinery, $166,292; merchandise, $67,889; cash, $8,751; accounts receivable, $46,238; deferred charges, $7,558; furniture, fixtures and tools, $75,811; water privilege, $350,000; life insurance, $4,287. Total, $910,485. Liabilities—Capital, $142,700; mortgages, $41,000; accounts payable, $32,456; notes payable, $289,867; deferred credits, $1,097; reserves, $208,596; surplus, $194,769. Total, $910,485.

E. Davey Dodd, of Jersey City, N. J., and Edward Kerr, of Downington, Pa., both vice-presidents of the Davey Company, box board manufacturers, were in Boston last week.

William L. Daniels, representative of the L. L. Brown Paper Company, Adams, Mass., called on the Boston trade last week.

Cuba May Increase Paper Duty

WASHINGTON, D. C., December 10, 1930.—It is reported that the Cuban Tariff Commission is considering proposals to increase the rates of import duty on kraft paper, wrapping paper, cardboard, box board, bristol board, and other paper and straw board according to a report to the Department of Commerce from Acting Commercial Attache Albert F. Nufer, at Havana. No information is available relative to the proposed rates of duty, the report states, nor is any indication given of the approval or disapproval of the proposals of the Commission.

When imported into Cuba from the United States, kraft paper at present pays duty at the rate of $2.75 per 100 kilos; wrapping paper (brown) $2.80 per 100 kilos; ordinary card board, whether or not coated with white lead, kaolin or other substances, $1.40 per 100 kilos; and the same, covered with white or colored paper, not fancy, $1.75 per 100 kilos; and bristol board, white or colored, $3.22 per 100 kilos.

New Laminated Paper Board Machine

HOLYOKE, Mass., December 10, 1930.—B. F. Perkins & Sons, Inc., of Willimansett, are manufacturing a machine that is to produce laminated paper board for barrels. This paper board, which is composed of a series of layers of board paper, was devised by Ernest P. Everett, of New York City. The machine will be perfected in about three months, it is expected. A coating of silicate is spread over the surface as a protection against fire.

For Cellophane Bags, Too

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NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 6, 1930

SUMMARY

Cigarette paper	3000 cs.
Wall Paper	150 bls., 19 cs.
Paper hangings	27 bls., 3 cs.
Hanging paper	1 cs.
Painted paper	2 bls.
News print	6800 rolls
Printing paper	5 rolls, 207 cs.
Wrapping paper	21 rolls, 13 cs.
Packing paper	399 rolls, 11 bls.
Filter paper	167 bls., 7 cs.
Drawing paper	29 rolls, 13 cs.
Colored paper	174 cs.
Decalcomania paper	63 cs.
Coated paper	20 cs.
Metal coated paper	25 cs.
Surface coated paper	95 cs.
Gold coated paper	5 cs.
Photo paper	15 cs.
Blue print paper	3 cs.
Tissue paper	3 cs.
Aluminum paper	14 cs.
Writing paper	6 cs.
Carbon paper	6 cs.
Pith paper	3 cs.
Oiled paper	2 cs.
Corn husk paper	30 cs.
Envelopes	11 cs.
Bristol boards	2 cs.
Stencil paper	2 cs.
Miscellaneous paper	25 bls., 269 rolls, 70 cs.

CIGARETTE PAPER

American Tobacco Co., Ontario, Bordeaux, 900 cs.
American Tobacco Co., Indep. Hall, Bordeaux, 200 cs.
International Souvenir Import Co., Indep. Hall, St. Nazaire, 15 cs.
De Manduit Paper Corp., Indep. Hall, St. Nazaire, 1604 cs.
De Manduit Paper Corp., Sarcoxie, Havre, 273 cs.
Max Spiegel & Son, St. Louis, Hamburg, 8 cs.

WALL PAPER

A. C. Dodman Jr. Inc., Aquitania, Southampton, 12 bls.
Thomas & Pierson, Aquitania, Southampton, 1 cs.
Guaranty Trust Co., Hamburg, Hamburg, 9 cs.
Kensington Wallpaper Co., Hamburg, Hamburg, 3 bls.
Globe Shipping Co., Hamburg, Hamburg, 5 bls.
F. J. Emmerich, Pr. Harding, Hamburg, 32 bls.
F. Downing & Co., Missouri, London, 2 bls.
Tice & Lynch, Gripsholm, Gothenburg, 1 cs.
A. C. Dodman Jr. Inc., Olympic, Southampton, 17 bls.
F. J. Emmerich, St. Louis, Hamburg, 35 bls., 1 cs.
Rohner Gehrig & Co., Deutschland, Hamburg, 17 bls.
S. Stern Stiner Co., Deutschland, Hamburg, 1 bl.
J. E. Bernard & Co., Deutschland, Hamburg, 26 bls., 1 cs.
Guaranty Trust Co., Deutschland, Hamburg, 4 cs.
Globe Shipping Co., Deutschland, Hamburg, 2 cs.

PAPER HANGINGS

Whiting & Patterson Co. Inc., Aquitania, Southampton, 2 bls., 1 cs.
A. C. Dodman Jr. Inc., Adriatic, Liverpool, 3 bls.
W. H. S. Lloyd & Co., Minnetonka, London, 22 bls., 3 cs.

HANGING PAPER

Hudson Forwarding Co., Paris, Havre, 1 cs.

PAINTED PAPER

W. H. S. Lloyd & Co., Paris, Havre, 2 bls.

NEWS PRINT

Perkins Goodwin & Co., Hamburg, Hamburg, 566 rolls
A. S. Zabriskie, Pr. Harding, Hamburg, 68 rolls.
Parsons & Whittemore, Inc., Pr. Harding, Hamburg, 204 rolls
—— Stavangerjord, Oslo 351 rolls.
Stora Kopperberg Corp., Gripsholm, Gothenburg, 449 rolls.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 91 rolls.
MacFaddens Publications, Inc., Gripsholm, Gothenburg, 172 rolls
Perkins Goodwin & Co., Stuttgart, Bremen, 42 rolls.
J. Madden, Stuttgart, Bremen, 491 rolls
W. H. Bell, Markland, Liverpool, N. S. 4314 rolls.
Perkins Goodwin & Co., Deutschland, Hamburg, 52 rolls.

PRINTING PAPER

E. Dietzgen & Co., Hamburg, Hamburg, 44 cs.
International F'd'g. Co., E. Francqui, Antwerp, 23 cs.
Keuffel & Esser Co., Pr. Harding, Hamburg, 5 rolls.
——Stuttgart, Bremen, 94 cs.
Dingelstedt & Co., Stuttgart, Bremen, 7 cs.
F. L. Kramer & Co., Paris, Havre, 25 cs.
F. L. Kramer & Co., Lancastria, London, 3 cs.
Guibout Freres, Olympic, Southampton, 3 cs.
——, Deutschland, Hamburg, 8 cs.

WRAPPING PAPER

Arkell Safety Bag Co., Gripsholm, Gothenburg, 21 rolls.
Sylvania Industrial Corp., Westernland, Antwerp, 13 cs.

PACKING PAPER

Wilkinson Bros. & Co. Inc., Stavangerfjord, Amotfors, 399 rolls, 11 bls.

FILTER PAPER

A. Giese & Son, Ontario, Bordeaux, 17 bls.
H. Reeve Angel & Co., Inc., Minnetonka, London, 4 cs.
J. Manheimer, Olympic, Southampton, 150 bls.
H. Reeve Angel & Co., Inc., Olympic, Southampton, 3 cs.

DRAWING PAPER

J. Henschel & Co., Hamburg, Hamburg, 1 cs.
Keuffel & Esser Co., Pr. Harding, Hamburg, 29 rolls, 1 cs.
Artists Brush & Color Co., Missouri, London, 1 cs.
H. Reeve Angel & Co. Inc., Minnetonka, London, 2 cs.
——, Stuttgart, Bremen, 8 cs.

COLORED PAPER

E. Dietzgen & Co., Hamburg, Hamburg, 107 cs.
E. Dietzgen & Co., Deutschland, Hamburg 56 cs.
Borden Riley Paper Co., Westernland, Antwerp, 8 cs.
J. Beckhard, Stuttgart, Bremen, 2 cs.
J. Beckhard, Bremen, Bremen, 1 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Hamburg, Hamburg, 8 cs.
C. W. Sellers, Hamburg, Hamburg, 10 cs.
C. W. Sellers, Bremen, Bremen, 14 cs.
Phoenix Shipping Co., Bremen, Bremen, 2 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 29 cs. (duplex).

COATED PAPER

W. A. Foster & Co., Aquitania, Southampton, 1 cs.
W. A. Foster & Co., Missouri, London, 5 cs.
Bank of America Natl. Assn., Hamburg, Hamburg, 12 cs.
Happel & McAvoy, Deutschland, Hamburg, 2 cs.

METAL COATED PAPER

Universal Car Loading Co., Hamburg, Hamburg, 2 cs.
K. Pauli Co., St. Louis, Hamburg, 9 cs.
K. Pauli Co., Deutschland, Hamburg, 14 cs.

SURFACE COATED PAPER

——, Hamburg, Hamburg, 9 cs.
Gevaert Co. of America, Westernland, Antwerp, 75 cs.
Phoenix Shipping Co., St. Louis, Hamburg, 1 cs.
——, Deutschland, Hamburg, 10 cs.

GOLD COATED PAPER

F. Murray Hill Co., Stuttgart, Bremen, 5 cs.

PHOTO PAPER

Davies Turner & Co., Hamburg, Hamburg, 2 cs.
Medo Photo-Supply Co., Minnetonka, London, 1 cs.
J. H. Schroeder Banking Corp., Bremen, Bremen, 9 cs.
J. J. Gavin, Olympic, Southampton, 3 cs.

BLUE PRINT PAPER

J. Henschel Co., Hamburg, Hamburg, 3 cs.

TISSUE PAPER

F. C. Strype, Adiratic, Liverpool, 2 cs.
F. C. Strype, Augustus, Genoa, 1 cs.

ALUMINUM PAPER

Keller Dorian Paper Co., Stuttgart, Bremen, 14 cs.

WRITING PAPER

R. H. Macy & Co., Inc., Deutschland, Hamburg,, 6 cs.

CARBON PAPER

W. J. Byrnes & Co., Aquitania, Southampton, 6 cs.

PITH PAPER

Nosawa & Co., Toba Maru, Keelung, 3 cs.

OILED PAPER

Eugene, Ltd., American Shipper, London, 2 cs.

CORN HUSK PAPER

International Accep. Bank, Stuttgart, Bremen, 30 cs.

ENVELOPES

J. Beckhard, Bremen, Bremen, 11 cs.

BRISTOL BOARDS

Keuffel & Esser Co., Lancastria, London, 2 cs.

STENCIL PAPER

International F'd'g. Co., St. Louis, Hamburg, 2 cs.

MISCELLANEOUS PAPER

G. W. Sheldon & Co., Aquitania, Southampton, 5 cs.
The Borregaard Co. Inc., Gripsholm, Gothenburg, 269 rolls, 25 bls.
Kraemer & Co., Gripsholm, Gothenburg, 97 bls.
H. Kaiser & Son, Westernland, Antwerp, 1 cs.
P. C. Kuper, Stuttgart, Bremen, 5 cs.
——, Stuttgart, Bremen, 16 cs.
Keller Dorian Paper Co., Paris, Havre, 22 cs.
P. Puttman, Paris, Havre, 4 cs.
Whitfield Paper Works, Tai Yang, Kobe, 2 cs.
Steffens Jones Co., Tai Yang, Kobe, 2 cs.
F. C. Strype, Tai Yang, Yokohama, 4 cs.
Kensington Wallpaper Co., St. Louis, Hamburg, 7 cs.

RAGS, BAGGINGS, ETC.

International Trust Co., E. Francqui, Antwerp, 30 bls. cotton waste.
F. Stern, Pr. Harding, Hamburg, 183 bls. rags.
Darmstadt Scott & Courtney, Pr. Harding, Hamburg, 26 bls. rags.
Banco Com'l Italiane Trust Co., Pr. Harding, Hamburg, 7 bls. rags.
Atlantic National Bank, Toba Maru, Osaka, 100 bls. rags.
Amtorg Trading Corp., Schenectady, Leningrad, 1659 bls. rags.
International Trust Co., Ontario, Havre, 188 bls. bagging.
International Trust Co., Ontario, Havre, 26 bls. rags
Guaranty Trust Co., Ontario, Dunkirk, 15 bls. rags.
Castle & Overton, Inc., Caledonia, Glasgow, 93 bls. paper stock.

(Continued on Page 68)

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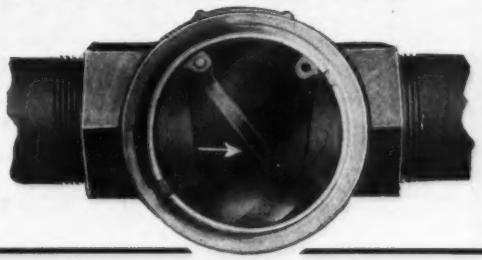

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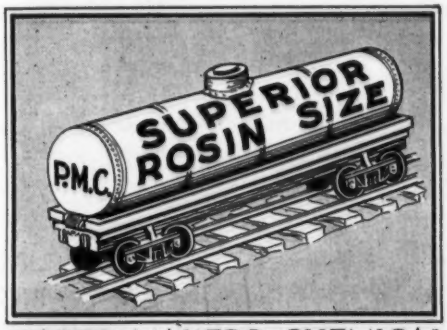

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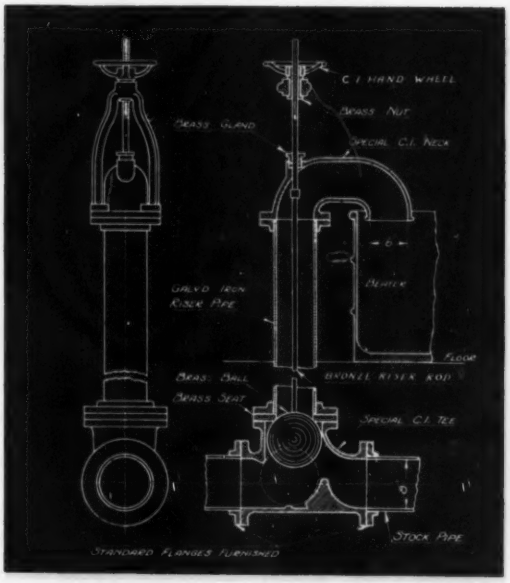

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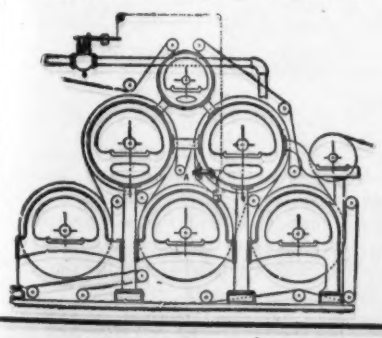

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W. F. PICKLES **Buckland, Conn.**

Imports of Paper and Paper Stock

(Continued from Page 66)

Baring Bros. & Co., Caledonia, Glasgow, 45 bls. paper stock
M. Snedaker Corp., Caledonia, Glasgow, 34 bls. thread waste.
M. Snedaker Corp., Caledonia, Glasgow, 43 bls. cuttings
I Harowitz, Gripsholm, Gothenburg, 4 bls. rags.
Castle & Overton, Inc., Indep. Hall, St. Nazaire, 42 bls. rags.
Arkus, Inc., Cabo Villano, Barcelona, 33 bls. rags.
S. Birkenstein & Son, Villano, Barcelona, 104 bls. rags
Banco Com'l Italiane Trust Co., Maria, Venice, 125 bls. bagging.
E. J. Keller Co., Inc., Innoko ——, 38 bls. new rags.
E. J. Keller Co., Inc., Executive, ——, 150 bls. new rags.

OLD ROPE

Amsco Trading Co., Pr. Harding, Hamburg, 41 coils.
Chemical Bank & Trust Co., Ambridge, Antwerp, 70 coils.
Brown Bros. & Co., Cabo Villano, Huelva, 206 rolls.
Brown Bros. & Co., Magallanes, Vigo, 68 rolls.

CASEIN

D. C. Andrews & Co., Pr. Harding, Hamburg, 54 bags.

WOOD PULP BOARDS

Lagerloef Trading Co., Schenectady, Helsingfors, 34 bls., 4 tons.

WOOD FLOUR

B. L. Soberski, Stavangerfjord, Frederickstad, 550 bags.

WOOD PULP

——, Hamburg, Hamburg, —wood pulp, 51 tons.
Price & Pierce, Ltd., Schenectady, Wallvik, 1050 bls. sulphite, 175 tons.
Chemical Bank & Trust Co., Stavangerfjord, Oslo, 750 bls. sulphite.
Chemical Bank & Trust Co., Stavangerfjord, Oslo, 150 bls. wood pulp
J. Anderson & Co., Stavangerfjord, Oslo, 150 bls. sulphite.
Parsons & Whittemore, Inc., Gripsholm, Gothenburg, 1260 bls. Sulphate.
Johanson Wales & Sparre, Inc., Gripsholm, Gothenburg, 449 bls. kraft soda pulp.
E. M. Sergeant & Co., Gripsholm, Gothenburg, 449 bls. kraft soda pulp.
Perkins Goodwin & Co., Gripsholm, Gothenburg, 103 bls. sulphate.
——, St. Louis, Hamburg, 154 bls. wood pulp, 25 tons.
Bulkley Dunton & Co., Griesheim, ——, 750 bls. wood pulp, 150 tons.
M. Gottesman & Co., Inc., Griesheim, Iggesund, 250 bls. sulphate, 50 tons.
——, Griesheim, Hernosand, 5886 bls. sulphite, 996 tons.
——, Deutschland, Hamburg, 134 bls. wood pulp, 27 tons.
Castle & Overton, Inc., Deutschand, Hamburg, 1373 bs. wood pulp, 212 tons.
M. Gottesman & Co., Inc., Maria, Sebenico, 6320 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING, DECEMBER 6, 1930

W. A. Feinberg & Son, Toba Maru, Kobe, 100 bls. rags.
Crocker Burbank Co., Missouri, London, 309 bls. waste paper.
Brown Bros. & Co., Maria, Trieste, 54 bls. old rope.
Bulkley Dunton & Co., Cliffwood, ——, 200 bls. wood pulp.
Russell McCandless, Tampa, Greaker, 250 bls. sulphite.
Russell McCandless, Tampa, Oslo, 2400 bls. sulphite.
Russell McCandless, Tampa, Drammen, 500 bls. ground pulp.

PHILADELPHIA IMPORTS

WEEK ENDING, DECEMBER 6, 1930

Darmstadt Scott & Courtney, Toba Maru, Kobe, 175 bls. rags.
Chase National Bank, Toba Maru, Kobe, 25 bls. rags.
Chase National Bank, Toba Maru, Osaka, 30 bls. rags.
Atlantic National Bank, Toba Maru, Osaka, 75 bls. rags.
——, Toba Maru, Yokohama, 50 bls. rags.
Pagel Horton & Co. Inc., Schenectady, Husum, 6000 bls. sulphate, 1000 tons.
Brown Bros. & Co., Ontario, Havre, 39 bls. rags.
——, Ontario, Havre, 231 bls. rags.
——, Ontario, Havre, 28 bls. bagging.
H. G. Lichenstein, Indep. Hall, Bordeaux, 300 bls. rags.
P. Berlowitz, Indep. Hall, St. Nazaire, 107 bls. rags.
J. A. Steer & Co., Indep. Hall, St. Nazaire, 40 bls. rags.
Castle & Overton, Inc., Indep. Hall, St. Nazaire, 285 bls. rags.
Brown Bros. & Co., Exeter City, Bristol, 89 coils old rope.
J. W. Hampton, Jr. & Co., Exeter City, Bristol, china clay.
Moore & Munger, Exeter City, Bristol, 630 tons china clay.
Bulkley Dunton & Co, Korsholm, ——, 1000 bls. wood pulp.
Russell McCandless, Tampa, Oslo, 200 bls. sulphite.
E. J. Keller Co., Inc., Sacandaga, ——, 56 bls. rags.
E. J. Keller Co., Inc., Exchester, ——, 60 bls. rags.

NEWPORT NEWS IMPORTS

WEEK ENDING, DECEMBER 6, 1930

M. Gottesman & Co. Inc., Griesheim, Iggesund, 1500 bls. sulphite, 300 tons.
——, Griesheim, Hernosand, 3150 bls. sulphite, 533 tons.
——, Griesheim, Hernosand, 900 bls, sulphite, 152 tons.

BALTIMORE IMPORTS

WEEK ENDING, DECEMBER 6, 1930

Price & Pierce, Ltd., Schenectady, Wallvik, 9510 bls. sulphite, 1585 tons.
Brown Bros. & Co., Schenectady, Norrsundet, 2500 bls. sulphate, 508 tons.
Amtorg Trading Corp., Schenectady, Leningrad, 1374 bls. rags.
M. Gottesman & Co., Inc., Schenectady, Helsingfors, 1200 bls. wood pulp, 203 tons.
Price & Pierce, Ltd., Schenectady, Stockholm, 4480 bls. sulphite, 568 tons.
Congoleum Nairn Co., Ambridge, Antwerp, 162 bls. rags.
National City Bank, Ontario, Havre, 58 bls. rags.
M. W. Pryor, Missouri, London, 69 bls. old rope.
W. H. Masson, Missouri, London, 100 bls. wood pulp.
Bulkley Dunton & Co., Bilderdyk, ——, 600 bls. wood pulp.
Bulkley Dunton & Co., Binnendyk, ——, 724 bls. wood pulp.
Bulkley Dunton & Co., Etna, ——, 2750 bls. wood pulp.
Bulkley Dunton & Co., Gonzenheim, ——, 3500 bls. wood pulp.
Bulkley Dunton & Co., Noorderdyk, ——, 300 bls. wood pulp.
Bulkley Dunton & Co., Trolleolm, ——, 3250 bls. wood pulp.
Bulkley Dunton & Co., Kelhiem, ——, 2750 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING, DECEMBER 6, 1930

Darmstadt Scott & Courtney, Ambridge, Antwerp, 124 bls. bagging.
Chase National Bank, Ambridge, Antwerp, 50 bls. bagging.

Unique Book On Paper Making

"An Historie For Young & Olde" is the title of a unique book published by the Eastwood Wire Corporation, of Belleville, N. J., about the beginnings of paper making in this country. Every effort has been made to achieve the quaint charm of the publications which William Bradford and his contemporaries produced in Colonial times, as they have come down to us today.

The sheets of paper, reminiscent of those first sheets made in the Rittenhouse Mill in 1690, were hand-dipped in a dye, one by one, and later stained to get the time-toned effect so characteristic of old books. The sheets were then printed, while still wet, on a hand press, from type almost identical with that used by early American printers.

Even the drawings are in the manner of our earliest illustrators. The map of Philadelphia and vicinity in Colonial days, was chanced upon in the New York Public Library after long search. Only the likeness of William Rittenhouse is missing—none could be discovered anywhere and it is almost certain none ever existed.

The book brings together in one volume many points about the life and times of the founder of paper-making in this country that have hitherto been available only from scattered sources. The volume should prove of interest and inspiration to those now engaged in the vast industry which Rittenhouse founded in this country in 1690.

Linthicum Foundation Prize 1931

The Faculty of Law of Northwestern University administering the income of the Charles Clarence Linthicum Foundation, announces that the sum of one thousand dollars and a bronze medal, as a first prize, and five sums of one hundred dollars each, as second prizes with honorable mention, will be awarded to the authors of the best monographs submitted by December 15, 1931, on the following subject: "A Comprehensive Critique of the International Chamber of Commerce Committee's 1930 Draft Convention for the International Protection of Industrial Property." Copies of the Draft Convention may now be obtained gratis from the chairman of the Linthicum Foundation Committee, Northwestern University School of Law, 357 East Chicago Avenue, Chicago.

New Herringbone Cut Gears Catalog

The W. A. Jones Foundry and Machine Company has just issued a forty page booklet on Herringbone Cut Gears. This book is very complete in that it lists in the various pitches gears in three different face widths in both cast iron and steel and covers in its pages complete explanation as to how their method is used.

The gears are cut by the Sunderland method on machines purchased in England, and the Jones Company claim that have gears more nearly perfect than any that have been manufactured before.

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Executives who negotiate loans know the importance of inventories to the banker. There has been considerable discussion as to what responsibility accountants should take for inventories when making audits. A booklet on this subject will be sent on request to bankers or executives.

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PROVIDENCE BOSTON NEW YORK
PHILADELPHIA CHARLOTTE

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, December 10, 1930

Seasonal conditions prevail in the local paper market. As usual, at this time of the year, orders are falling off slightly. However, supplies are moving into consumption in heavy volume. Stocks in the hands of dealers are not excessive and sales forces of the leading paper organizations are fairly optimistic regarding the future outlook. Prices are holding up to former levels, in most instances.

Production of news print is being maintained at approximately 64 per cent of capacity in the United States and Canada, according to information gathered by the News Print Service Bureau. Shipments are going forward at 70 per cent of rating. Stocks at the mills are equivalent to five days average output. Contract prices for 1931 are the same as this year.

The paper board market is irregular. Box board output is falling off and the trend is expected to be downward to the end of the year. Demand for fine papers continues moderately active with book papers running ahead more than anticipated. Tissues are moving in good volume. No radical changes have been recorded in the kraft paper situation and prices are being maintained at previously reported levels.

Mechanical Pulp

Offerings of both domestic and imported ground wood are rather scarce at present and the market is exhibiting a strong undertone. Prices are firmer than of late. No. 1 imported mechanical pulp is now quoted at from $28 to $32 per ton, on dock; while No. 1 domestic mechanical pulp is offered at from $28 to $34 per ton, f. o. b. mill.

Chemical Pulp

Trading in the chemical pulp market was light during the past week and prices of the various grades are easy. Mitscherlich unbleached is now quoted at from $2.15 to $2.70; No. 2 strong unbleached at from $1.95 to $2.05; No. 1 kraft at from $1.60 to $1.75 and No. 2 kraft at from $1.40 to $1.55, all on dock, Atlantic ports. Domestic Mitscherlich is offered at from $2.50 to $3.25 and soda bleached at from $2.75 to $2.90, f. o. b. pulp mill.

Old Rope and Bagging

The old rope market is displaying a firm trend. Both domestic and imported old manila rope are in good request, with prices holding to schedule. Small mixed rope is moving in good volume. Offerings of domestic gunny bagging are limited. Scrap bagging is in seasonal demand. Prices are generally unchanged.

Rags

Conditions in the domestic rag market are fairly satisfactory. Demand for cotton cuttings is fairly persistent for the time of year. The roofing rag situation continues unsatisfactory. Mixed rags are going forward in fair volume. The imported rag market is dull, with prices practically unchanged.

Waste Paper

Demand for the better grades of paper stock is moderately active. There is some mill interest in hard and soft white shavings but prices are rather weak. Book stock continues fairly steady. Little interest is being shown in the lower grades by the board mills. Folded news and mixed paper are both quiet. Prices are nominal.

Twine

The local twine market is in a sound position, taking into account the general business depression. Demand for the various grades is persistent and the movement into consumption should continue heavy from now until the end of the year, at least. Prices are holding to schedule and reports of concessions are infrequent.

Progress Under the Hewitt Law

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., December 8, 1930.—The Conservation Department has accomplished considerable in regard to idle lands in the state since the Hewitt law was established in 1929. Records show that the department has acquired 40,257 acres of land at an average cost of $3.70 per acre. This has been proved to 7,476 acres and the state has planted practically all of this land at a cost of $5.68 per acre. It is claimed that if the voters at the next election approve the referendum on a $15,000,000 bond issue for the acquisition and reforestation of idle lands during the next fifteen years the state should have a new forest of great value. The plans of the Conservation Department call for 1,000,000 planted acres at the termination of that period.

Virtually all of the forest preserve counties are interested in the proposed Hewitt bond issue which would amend the state constitution by permitting the planting of forests in counties outside the Adirondack Park and to crop the planted trees when merchantable. Up to this time the state has not acquired land in these counties under the Hewitt law of 1929 and consequently it would not be permitted to thin the trees or practice silvaculture. The approval of the amendment would cure this condition without endangering the present provision covering state lands and all land within the park.

Bids Asked for Government Waste Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 10, 1930—The Government Printing Office will receive bids on December 15 for accumulations of waste paper, etc., for the six months period beginning January 1. Included in the waste expected is the following:

75,000 pounds of shavings from blank books and clean waste.
250,000 pounds shavings from book papers, white.
400,000 pounds shavings from book papers, white and colored.
250,000 pounds printed waste, free from ground wood.
125,000 pounds postal card waste, not printed.
1,400,000 pounds wrappers from rolls and flat stock.
125,000 pounds cuttings from strawboard, pulpboard, etc.
2,500 pounds twine and rope from bundles.
100,000 pounds discarded publications.
125,000 pounds news print and news print shavings.
30,000 pounds used monotype keyboard paper in rolls.
7,500 pounds cotton, canvas, etc. clippings.

BURRS

BURRS

Mill Cogs

ON SHORTEST POSSIBLE NOTICE

We make all kinds of Mill Cogs and have special facilities that will be of great service to you. We make a specialty of "ready dressed" cogs which are

READY TO RUN

the moment driven and keyed. Write at once for circular "G" and instruction sheets free.

THE N. P. BOWSHER CO.
South Bend, Ind.
Established 1882

Paper Stock

Supplies for Paper Manufacturers

A reliable source of supply.
Established for 43 years.
Write us your needs

Mendelson Bros. Paper Stock Co.
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RAGS — BURLAP
BAGGING — ROPE
JUTE BUTTS, MAGAZINES, CATALOGS
OLD PAPERS, THREAD WASTE AND
ALL GRADES OF RAGS
CUT QUICKLY AND EFFICIENTLY
WITH THE

TAYLOR, STILES & COMPANY
GIANT
REG. U.S. PAT. OFF.
RIEGELSVILLE, N.J. U.S.A.

This is the GIANT 2A CUTTER WITH A CAPACITY OF 3000 lbs. PER HOUR
GIANT RAG CUTTERS HAVE CAPACITIES OF FROM 1 to 5 tons per hour.

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TAYLOR, STILES & COMPANY
RIEGELSVILLE, N. J.
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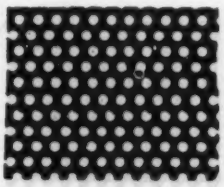
Perforated Metal Screens

For Pulp and Paper Mills



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".065" Round

CHARLES MUNDT & SONS
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Red
Brown
Yellow
} Oxides

Talc
Yellow Ochres
Umbers, Agalite

C. K. Williams & Company
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Copper Alloy Steel Pipe completely fabricated in our plant from your sketches. Equipped with forged steel flanges and coated with either Prime Western Spelter or Specially Prepared Mineral Rubber Asphalt. Sizes 3" to 42" diameter.

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PERFORATED METALS

Screens of All Metals

For use in Pulp and Paper Mills

Miscellaneous Markets.

Office of the PAPER TRADE JOURNAL
Wednesday, December 10, 1930

BLANC FIXE.—Trading in the blanc fixe market was moderately active during the past week. The contract movement was normal. Price remain unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Shipments against contract are moving at a steady pace. Prices are generally holding to previously quoted levels. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—The casein market is rather quiet at present and prices are easy. Domestic standard ground is now quoted at 9¾ cents and finely ground at 13 cents per pound. Argentine standard ground is selling at 11 cents and finely ground at 12½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is fairly active. The contract movement is well up to average. Prices are unchanged. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Conditions in the china clay market are fairly satisfactory for the season. Prices are holding to schedule, without difficulty. Imported china clay is quoted at from 15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Most of the business transacted in the chlorine market during the past week was along routine lines. Supplies are moving into consumption at a normal pace for the season. Chlorine is quoted at around $2.00 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market continues to fluctuate. Prices are irregular. The grades of gum rosin used in the paper mills are now quoted at from $5.45 to $5.75 per 280 pounds, in barrels, at yard. Wood rosin is selling at from $4.50 to $5.50 per 280 pounds, in barrels, on dock.

SALT CAKE.—Offerings of salt cake are adequate to take care of current requirements. Prices are steady. Salt cake is quoted at from $16 to 17. For large tonnage German salt cake is offered at from $15.50 to $16.00. Chrome salt cake is selling at from $15 to $15 per ton, in bulk, at works.

SODA ASH.—The soda ash market is practically unchanged. Shipments against contract are going forward in seasonal volume. Prices are holding to schedule. Contract quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.15; in bags, $1.32; and in barrels, $1.55 per 100 pounds.

STARCH.—Business in the local starch market was moderately active. Supplies are moving to the paper mills in good volume for the time of year. Prices remain unchanged. Special paper making starch is quoted at $3.62 per 100 pounds, in bags; and at $3.89, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is exhibiting a fairly steady trend. Contract shipments are moving in seasonal volume. Prices remain unchanged. Commercial grades are quoted at from $1.40 to $1.55, and iron free at $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—There were no radical changes reported in the sulphur market. Sulphur is still quoted at $18 per long ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby carloads, the quotation is $21 per ton.

TALC.—Supplies of talc are going forward to the paper mills in good volume for the season. Prices are holding to previously quoted levels. Domestic talc is selling at from $16 to $18 per ton, in bulk, and imported talc is offered at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	6.75	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	6.75	@11.00
Book, Cased—		
S. & S. C.	5.75	@ —
M. F.	5.50	@ —
Coated and Enamel	7.00	@10.50
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.65	@ .67½
Anti-Tarnish M G only	.65	@ .70
Colored	.70	@ .90
White No. 2	.55	@ .57½
Kraft	.65	@ .70
Manila	.55	@ .57½
Kraft—		
No. 1 Domestic	5.00	@ 6.00
No. 2 Domestic	3.00	@ 3.75
Southern	3.00	@ 3.75
Imported	6.00	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.00	@ 5.25
No. 2 Wood	3.50	@ 4.00
Butchers	3.37½	@ —
Fibre Papers—		
No. 1 Fibre	4.25	@ 5.50
No. 2 Fibre	4.00	@ 4.75
Common Bogus	1.50	@ 3.00
Screenings	2.00	@ 3.00
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs., No. 1	.09¾	@ —
No. 2	.11¼	@ —
Bleached, basis 20 lbs.	.11¾	@ —

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	32.50	@35.00
Straw	40.00	@45.00
Chip	30.00	@32.00
Binders' Boards	65.00	@70.00
Standard Test Jute Liner	40.00	@42.00
Sgl. Mla. Ll. Chip.	42.50	@ —

(F. o. b. Mill)

Wood Pulp Boards	70.00	@80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	28.00	@32.00
Dry	30.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@34.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.00	@ 4.25
Easy Bleaching	2.60	@ 2.80
No. 1 strong unbleached	2.10	@ 2.65
Mitscherlich unbleached	2.15	@ 2.70
No. 2 strong unbleached	1.95	@ 2.05
No. 1 Kraft	1.60	@ 1.75
No. 2 Kraft	1.40	@ 1.55
Sulphate—		
Bleached	3.40	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	2.65	@ 4.75
Easy Bleaching Sulphite	2.55	@ 2.75
News Sulphite	2.35	@ 2.60
Mitscherlich	2.50	@ 3.25
Kraft (Domestic)	2.10	@ 2.75
Soda Bleached	2.75	@ 2.90

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	8.00	@ 8.50
New White, No. 2	7.00	@ 7.25
Silesias No. 1	6.50	@ 7.00
New Unbleached	8.25	@ 9.00
New Blue Prints	5.25	@ 5.50
New Soft Blacks	4.00	@ 4.50
Blue Overall	6.25	@ 6.50
Washables	4.25	@ 4.75
Fancy	4.75	@ 5.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	7.50	@ 8.00
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.50	@ 4.00
New Mixed Blacks	3.25	@ 3.50

Old Rags

White, No. 1—		
Repacked	5.25	@ 5.75
Miscellaneous	4.25	@ 4.75
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.30	@ 2.50
St. Soiled, White	1.50	@ 1.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.65	@ 1.85
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.25	@ 1.30
No. 1	1.25	@ 1.30
No. 2	.90	@ 1.00
No. 3	.70	@ .80
No. 4	.65	@ .70
No. 5A	.50	@ .60

Foreign Rags

New Rags

New Dark Cuttings	2.30	@ 2.50
New Mixed Cuttings	2.25	@ 2.75
New Light Silesias	6.25	@ 6.50
Light Flannelettes	6.50	@ 7.00
Unbleached Cuttings	8.25	@ 8.75
New White Cuttings	7.50	@ 8.00
New Light Oxfords	6.00	@ 6.50
New Light Prints	4.75	@ 5.25

Old Rags

No. 1 White Linens	7.50	@ 8.00
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 5.75
No. 2 White Cotton	4.50	@ 5.00
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.70	@ 1.80
Extra Light Prints	2.75	@ 3.00
Ord. Light Prints	2.15	@ 2.40
Med. Light Prints	1.65	@ 1.75
Dutch Blue Cottons	2.00	@ 2.10
French Blue Linens	2.65	@ 2.75
German Blue Linens	2.25	@ 2.40
German Blue Cottons	1.85	@ 1.90
Checks and Blues	1.85	@ 1.90
Lindsay Garments	1.20	@ 1.30
Dark Cottons	1.00	@ 1.10
Old Shopperies	.95	@ 1.00
New Shopperies	.95	@ 1.05
French Blues	1.90	@ 2.00

Old Rope and Bagging

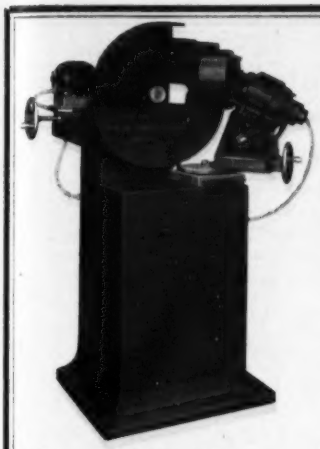
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.55	@ 1.65
Domestic	1.65	@ 1.75
Wool Tares, light	1.30	@ 1.40
Wool Tares, heavy	1.35	@ 1.40
Bright Bagging	1.30	@ 1.35
Small Mixed Rope	.90	@ 1.00
Manila Rope—		
Foreign	2.70	@ 2.85
Domestic	3.00	@ 3.25
New Burlap Cut	2.25	@ 2.50
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	2.50	@ 2.75

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	2.90	@ 3.00
Hard, white, No. 2	2.35	@ 2.50
Soft, white, No. 1	2.50	@ 2.60
White envelope cuttings	3.00	@ 3.10
Flat Stock—		
Stitchless	.95	@ 1.05
Overissue Mag.	.95	@ 1.05
Solid Flat Book	.80	@ .95
Crumpled No. 1	.70	@ .85
Solid Book Ledger	1.90	@ 2.00
Ledger Stock	.85	@ 1.25
New B. B. Chips	.30	@ .35
Manilas—		
New Env. Cut.	2.10	@ 2.25
New Cuttings	1.50	@ 1.65
Extra No. 1 old	1.25	@ 1.35
Print	.60	@ .65
Bogus Wrapper	.60	@ .65
Container	.35	@ .45
Old Kraft Machine—		
Compressed bales	1.35	@ 1.45
News—		
No. 1 White News	1.80	@ 1.90
Strictly Overissue	.45	@ .50
Strictly Folded	.35	@ .40
No. 1 Mixed Paper	.25	@ .30
Common Paper		Nominal



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ACCURACY AND UNIFORMITY OF GRINDING IS AUTOMATIC.

No. 450 Slitter Knife Grinder

For Slitter Knives and Circular Discs 2 to 20 Inches Diameter

Furnished Motor Drive and With Cabinet Base Construction.

For Slitter Knives any Bevel, any Thickness, and any Amount of Bevel, One Side, Two Sides, and either Straight or Concave Grind.

Full information gladly supplied.

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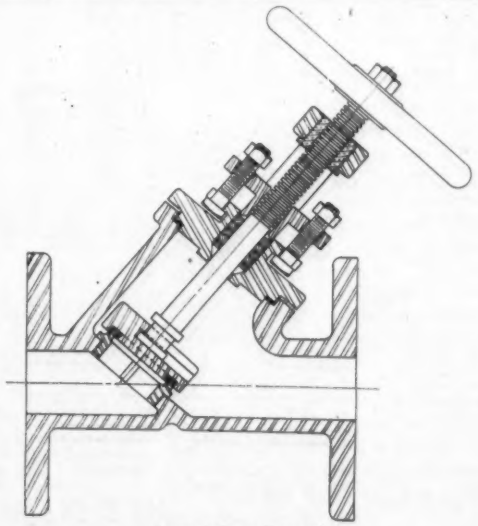

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CHROME NICKEL
Globe, Angle, and Y valves for
Relief and Acid lines
All Parts
RENEWABLE AND INTERCHANGEABLE
With all three types

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High Grade Filler Clay

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50 Church St. New York

500 Tons Daily

We will be glad to send you samples—

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.22	@	.24
No. 2	.21	@	.22
No. 3	.19	@	.20
B. C., 18 basis	.32	@	.34
A. Italian, 18 basis	.38	@	.39
Finished Jute—			
Dark 18 basis	.20½	@	.21
Light 18 basis	.22½	@	—
Jute Wrappings, 3-6 Ply—			
No. 1	.14¾	@	—
No. 2	.13¾	@	—
Tube Rope—			
4-ply and larger	.10¾	@	—
Fine Tube Rope—			
4-ply	.12¾	@	—
3-ply	.13¾	@	—
2-ply	.14¾	@	—
Paper Makers Twine			
Balls	.08¾	@	—
Box Twine, 2-3 ply	.09	@	.10
Jute Rope	.11	@	.12
Amer. Hemp, 6	.29	@	.31
Java Sisal			
No. 1 Basis	.12	@	—
No. 2 Basis	.11¾	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Twine	.22½	@	.24½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¾
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	5.00	@	5.50
Southern Kraft	3.75	@	4.00
No. 2 Kraft	3.75	@	4.00
Wood Tag Boards	.04¼	@	.06½
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	30.00	@	35.00
Solid News	37.50	@	—
Solid News	32.50	@	37.50
Manila Lined Chip	40.00	@	45.00
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cut-			
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.30	@	.35
No. 2 Mixed	.25	@	.35
Ledger & Writings	.90	@	.95
Solid Books	.90	@	.95
Blanks	1.60	@	1.65
Krafts	1.30	@	1.40
New Kraft Cuts	1.50	@	1.70
Manila Envelope Cuttings	1.65	@	1.70
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.45	@	.50
Folded News (over-issue	.40	@	.45
Old Newspapers—			
No. 1	.35	@	.40
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.03½	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03½	@	.04
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.03½
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	32.50	@	35.00
Chip Board	30.00	@	32.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.09	@	.09½
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.08½	@	.09
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05	@	.05½
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.50
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.70
Solid Ledger Stock	1.55	@	1.65
Writing Paper	1.05	@	1.25
No. 1 Books, heavy	1.00	@	1.15
No. 2 Books, light	.90	@	.95
No. 1 New Manila	2.15	@	2.30
No. 1 Old Manila	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.35	@	1.40
Common Paper	.25	@	.35
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Corrugated Board	.50	@	.60
Overissue News	.45	@	.50
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	6.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.25	@	1.30
Repacked	.80	@	.90

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12¾
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11¾
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06¾	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.06
No. 2 Kraft	.03¾	@	.05
(Less car-freight to Boston)			
Southern Kraft	.03¾	@	.04¾
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	—	@	50.00
Filled News Board	32.50	@	—
Chip Board	30.00	@	—
Chip Board (Creasing)	32.50	@	—
Single Manila Lined Chip	45.00	@	—
Single White, Patent Coated News Board Bender, No. 1	60.00	@	75.00
Single White, Patent Coated News Board Bender No. 2	55.00	@	65.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	67.50	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	—	@	2.00
No. 1 Books, Heavy	—	@	.90
No. 1 Books, Light	.85	@	—
Crumpled Stitchless Book Stock	—	@	.70
Manila Env. Cuttings	1.85	@	2.00
No. 1 Old Manila	—	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.20	@	1.30
Print Manila	.75	@	.80
No. 1 Mixed Paper	.17½	@	.20
Overissue News	—	@	.30
Old Newspapers	.37½	@	.40
Box Board, Chip	.50	@	.55
Corrugated Boxes	.35	@	.40

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.70	@	—
Domestic	1.60	@	—
Manila Rope—			
Foreign	—	@	2.75
Domestic	—	@	3.50
Transmission Rope	2.00	@	2.25
Mixed Strings	.80	@	.90
Jute Wool Strings	.80	@	.90
Jute Carpet Threads	1.00	@	1.10
Scrap Burlaps	1.30	@	1.35
Scrap Sisal	—	@	1.50
Scrap Sisal for shredding	—	@	1.75
Wool Tares, heavy	—	@	1.40
New Burlap Cutting	1.75	@	2.00
Australian Pouches	—	@	2.50
Heavy Baling Bagging	2.00	@	2.10
Bleachery Burlap	—	@	3.50

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.07½	@	.08
New White No. 2	—	@	.06
Silesias No. 1	.06	@	.06¾
New Unbleached	—	@	.09¼
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	3.65	@	4.00
Roofing Stock—			
No. 1	.90	@	.95
No. 2	—	@	.75
No. 3	—	@	.65
No. 4	—	@	.60

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.70	@	.85
New No. 1 white shirt cuttings	7.50	@	8.00
Dutch Blues	—	@	1.80
Lace Curtains	4.00	@	4.25
New Checks & Blues	4.25	@	4.40
Old Fustians	1.65	@	1.65
Old Linsey Garments	.90	@	1.00

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.09¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.09½	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	4.00	@	5.75
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 4 S. C. (carloads)	6.25	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.50	@	—
Wrapping—			
(Delivery Points)			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft No. 2	5.40	@	—
(Delivered Toronto)			
News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	50.00	@	—
Sulphite, news grade	70.00	@	—
Sulphite, bleached	72.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.80	@	—
Soft White Book Shavings	2.60	@	—
White Blk. News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.10	@	—
Light and Crumpled Book Stock	1.20	@	—
Ledgers and Writ-			
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.80	@	—
Kraft	1.90	@	—
News and Scrap—			
Strictly Overissue	.70	@	—
Strictly Folded	.70	@	—
No. 1 Mixed Paper	.60	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

Advertising matter paged consecutively with text, has been removed here to lessen the bulk of this volume.